



UNIVERSITY
of HAWAII®
SYSTEM

DEPT. COMM. NO. 377
David Lassner
President

January 27, 2021

The Honorable Ronald D. Kouchi,
President and Members of the Senate
Thirty-First State Legislature
State Capitol, Room 409
Honolulu, HI 96813

The Honorable Scott K. Saiki, Speaker
and Members of the House of
Representatives
Thirty-First State Legislature
State Capitol, Room 431
Honolulu, HI 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

Pursuant to Section 304A-3007, Hawai'i Revised Statutes, I am transmitting a copy of the 2020 Annual Report of the Research Corporation of the University of Hawai'i.

In accordance with §93-16, Hawai'i Revised Statutes, we have also transmitted a copy of this report to the Legislative Reference Bureau Library.

The public may view an electronic copy of this report on at the following link:
<http://www.rcuh.com/>.

Sincerely,

A handwritten signature in black ink that reads 'David Lassner'.

David Lassner

Enclosure

c: Legislative Reference Bureau Library

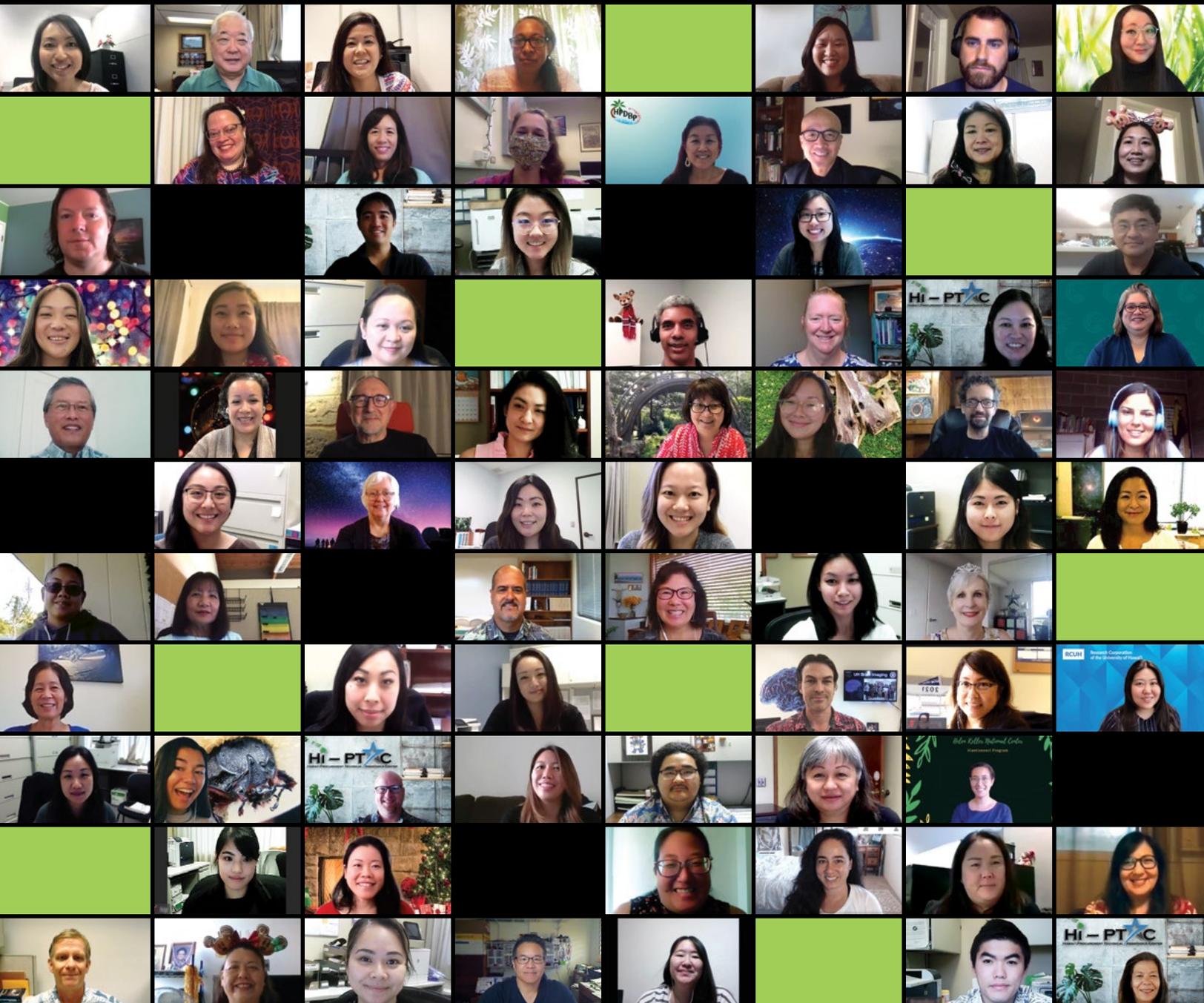
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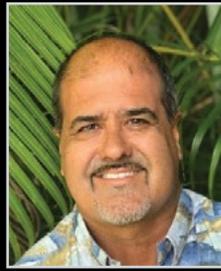
2020

ANNUAL REPORT

A Year of Evolving, Adapting, and Embracing Change



WELCOME



Leonard Gouveia, Jr.
Executive Director



Donna Ikeda
Board Chair

2020 was a year full of unexpected events that are leaving immeasurable impacts on most, if not everyone. Despite these difficulties, it still proved to be a record funding year with many notable achievements in our research community as the Research Corporation of the University of Hawai'i (RCUH) celebrates its 55th anniversary year of providing efficient and cost-effective support to the University of Hawai'i (UH) and others in the state of Hawai'i.

This report provides the opportunity to celebrate the people who contribute to advancing our mission to support and enhance research, development, and training in Hawai'i, with a focus on UH. As always, this includes RCUH's core staff, whose daily work makes it possible to deliver support and resources to our research community. Sadly, we must also note that RCUH suffered a significant loss this year due to the retirements of Dr. Sylvia Yuen and Brenda Kanno. Their departure marks the end of an era here at RCUH, and we will all come to appreciate them even more as we continue to try and fill the void they have left. On the occasion of their retirements, we want to thank them for their years of leadership and commitment to RCUH, UH, and the state of Hawai'i. Aloha and mahalo to both of them!

As always, RCUH continues to invest in technology and professional staff to improve our service to our clients. We are currently working on updating RCUH's strategic plan for the next five (5) years (2022-2026) and will be reaching out to numerous stakeholders to help develop this plan, with an emphasis on improving our services and value to UH and the state of Hawai'i.

As in past reports, information relating to RCUH's financial and personnel status is for the fiscal year (July 2019–June 2020), while the program reports are applicable to the 2020 calendar year. Once again, it is worth noting that RCUH received a clean audit report with no findings from N&K CPAs.

Finally, we acknowledge and thank the RCUH Board of Directors for their support and guidance throughout this challenging year. We look forward to working closely with them during the upcoming year, in which we will be developing RCUH's 2022–2026 strategic plan. We hope you find this report interesting and helpful and encourage anyone to reach out to us if there are any questions or concerns. The 2020 RCUH Annual Report is also posted online at www.rcuh.com for your convenience.

ABOUT US

The Research Corporation of the University of Hawai'i (RCUH) was established by the Hawai'i State Legislature in 1965 as a public instrumentality and is attached to the University of Hawai'i (UH) for administrative purposes.

To fulfill its mission, RCUH is exempt from certain State procurement and personnel laws. This allows RCUH to provide rapid and efficient services that enable its clients to be more productive and to meet their research, development, and training objectives in a timely manner.

OUR VISION

A Hawai'i where research, development, and training flourish and energize a prosperous state economy.

OUR MISSION

To support and enhance research, development, and training in Hawai'i with a focus on the University of Hawai'i.

RCUH BOARD OF DIRECTORS

The affairs of the Research Corporation of the University of Hawai'i are under the general management and control of its eight-member Board of Directors.



Donna Ikeda
Board Chair



Michael Maberry
Vice Chair



Eugene Bal III



Kelli Goodin



Ken Hayashida



David Karl



Jan Sullivan



Vassilis Syrmos

Mahalo to our three outgoing board members who completed their service at the end of the 2020 fiscal year. We appreciate your years of service to RCUH!



David Duffy



Randolph Moore

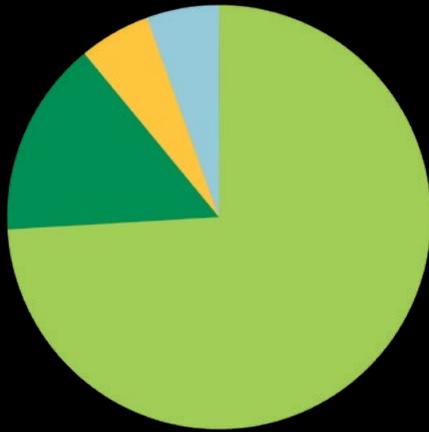


Raynard Soon

FINANCIAL & HR REPORT

VOLUME OF BUSINESS BY PROJECT TYPE

Total Volume of Business:
\$270,545,423



UH EXTRAMURAL PROJECTS (\$200,438,086)

Externally sponsored federal and non-federal contracts, grants, and other agreements

UH REVOLVING PROJECTS (\$40,449,912)

Self-sustaining, income-generating projects established to support a specialized service activity, a recharge center, or other sales and service activities

UH INTRAMURAL PROJECTS (\$14,899,989)

Internally sponsored programs or activities funded with UH Research and Training Revolving Funds (RTRF) or Tuition and Fee Special Funds (TFSF)

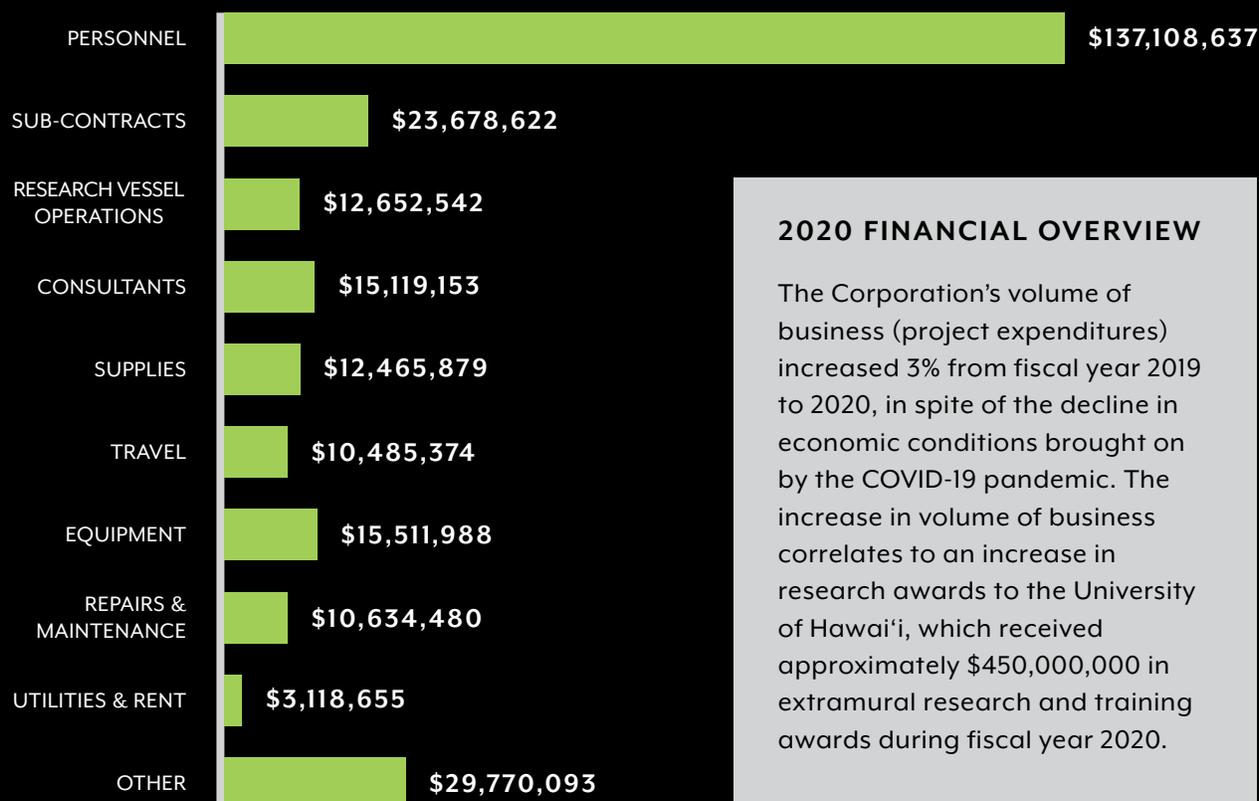
DIRECT PROJECTS (\$14,757,436)

Projects assigned to and accepted by RCUH from non-UH organizations, including federal and State agencies, international organizations, and other not-for-profit organizations

PROJECTS BY COUNTY

COUNTY	NO. OF PROJECTS	NO. OF EMPLOYEES	VOL. OF BUSINESS
HONOLULU	6,219	1,412	\$222,144,355
HAWAI'I	370	567	\$26,998,055
MAUI	105	272	\$20,953,060
KAUA'I	14	68	\$449,953
STATEWIDE	6,708	2,319	\$270,545,423
OTHER (Continental U.S. + International)		124	

FY 2020 FINANCIAL EXPENDITURES



2020 FINANCIAL OVERVIEW

The Corporation's volume of business (project expenditures) increased 3% from fiscal year 2019 to 2020, in spite of the decline in economic conditions brought on by the COVID-19 pandemic. The increase in volume of business correlates to an increase in research awards to the University of Hawai'i, which received approximately \$450,000,000 in extramural research and training awards during fiscal year 2020.

TRANSACTIONS BY FISCAL YEAR

TRANSACTIONS	FY 2020	FY 2019	FY 2018
TIMESHEETS/eTIMESHEETS	56,089	55,612	59,166
VENDOR PAYMENTS	42,381	48,743	50,927
NON-PO PAYMENTS	25,381	29,326	30,188
PURCHASE ORDERS	12,711	14,919	16,295
TRAVEL REQUESTS/COMPLETIONS	14,178	17,900	17,905
CASH RECEIPTS	9,176	10,313	10,028
W-2'S ISSUED	3,385	3,429	3,587
TERMINATIONS	1,388	1,398	1,489
NEW HIRES	1,375	1,439	1,417

HIGHLIGHTS OF ACHIEVEMENTS

COVID-19 RESPONSE

RCUH responded to the challenges posed by the COVID-19 pandemic with two aims: to protect the health and safety of RCUH employees and to provide ongoing services to help Principal Investigators (PIs) manage their projects and staff. RCUH disseminated six advisories, which provided guidance on the development of contingency plans, employee safety in the workplace, recalling employees from telework, and other issues.

The Human Resources Department also offered an informational session and Q&A discussion on the Families First Coronavirus Response Act (FFCRA), Emergency Paid Sick Leave (EPSL), and Expanded Family and Medical Leave (EFML) benefits. The training was conducted via video conference and received positive feedback from the 50+ supervisors and project staff in attendance.

NISP SECURITY REVIEW

RCUH participates in the National Industrial Security Program (NISP), which is overseen by the U.S. Defense Counterintelligence and Security Agency. One of the requirements of the NISP is for a cleared facility to conduct a self-inspection of its security program at regular intervals. In July 2020, a representative from the Defense Counterintelligence and Security Agency (DCSA) conducted a virtual Continuous Monitoring (CM) engagement of RCUH. No vulnerabilities were identified, and RCUH's security program was deemed compliant with current NISP directives.



COVID-19'S IMPACT ON RCUH OPERATIONS

Like many businesses across the state, RCUH modified its operations during the COVID-19 pandemic to protect the health and well-being of its employees. While continuing to provide financial and human resources services to PIs and staff, RCUH did the following:

- secured data while arranging for some staff to work remotely,
- instituted staggered work hours, social distancing, and cleaning procedures at workplaces,
- restricted visitors at RCUH work sites,
- conducted meetings via video conference, and
- reduced expenses to align with the declining economy.

IT TRANSFORMATION PLAN

RCUH's IT Council developed a plan that would align the organization's digital systems and services. The objective was to reimagine RCUH's business in the future and to establish a vision for the IT architecture that will support RCUH's enterprise business strategy. This initiative provides a roadmap to modernize RCUH's current IT system to keep abreast of new technologies and to increase efficiency and productivity. It is anticipated that the enterprise transformation plan will be reviewed annually and modified as conditions change.

FORMULA FUNDS TRANSITION

RCUH successfully transitioned the service order of two sources of federal formula funds from UH:

- US Department of Agriculture: funds designated for agricultural, forestry, and animal health/disease research; awarded to the UH College of Tropical Agriculture and Human Resources (CTAHR).
- US Department of Education: funds designated for training; awarded to the State Director of Career and Technical Education for administrative purposes and allocated to the UH Community Colleges.

SuperQUOTE™ INTERFACE

SuperQUOTE™ provides electronic solicitation of quotations, bids, proposals, and information for UH, RCUH, and other government agencies. In the past, RCUH users were required to input solicitation information on the SuperQUOTE™ website, and then re-input the same information into the RCUH Financial Portal. In collaboration with CommercePoint, RCUH developed an interface that populates purchase orders with data from the SuperQUOTE™ website, streamlining the process and eliminating the double entry of information.



IT TRANSFORMATION PLAN GUIDING PRINCIPLES

The RCUH IT Council, comprised of RCUH's leadership team and all of its IT contractors, developed the following principles to guide decision-making throughout the IT Transformation process and beyond as part of the IT Governance Framework:

- Align with RCUH strategic goals
- Prepare for future growth and expansion
- Be cost effective
- Use an enterprise view with all RCUH departments in mind
- Be flexible and innovative
- Enhance the customer experience
- Increase self-sufficiency of functional users
- Automate to improve employee efficiency
- Retain the best system features where possible
- Ensure system and data security
- Prioritize cloud technology

eTIMESHEET SYSTEM

The long-awaited eTimesheet was launched in mid-March for employees on a standard work schedule (i.e., 8 hours per day, Monday through Friday) and piloted in mid-November for those with non-standard work schedules (e.g., variable work hours, non-consecutive work days, etc.). The new electronic timesheet impacts RCUH's 2,300+ employees working throughout the world. With this new system, employees are able to submit their work hours on the go and access prior eTimesheets in their Employee Self-Service (ESS) account.

It was a complex and difficult initiative to implement as the system had to comply with sponsor, federal, and State requirements and accommodate the unusual work schedules for various research and training projects. It also had to be absolutely accurate because of its impact on employee benefits, such as vacation and sick leave accrual. To help projects transition to the new system, RCUH developed user guides with step-by-step instructions on how to complete and approve eTimesheets. RCUH also offered numerous online training sessions and Q&A discussions for supervisors and project staff via video conference.

eSIGN

Since 2017 RCUH has partnered with the State of Hawai'i Office of Enterprise Technology Services to provide eSign, a secured electronic signature service licensed by Adobe Systems. With many project staff working remotely, RCUH reported a record number of documents being routed for electronic signatures. In 2020, RCUH users completed a record-high 56,632 documents in eSign, a 210% increase compared to 2019's runner-up tally of 18,281 documents. The median time to complete a document signature was 79 minutes.



eTIMESHEET SNAPSHOT

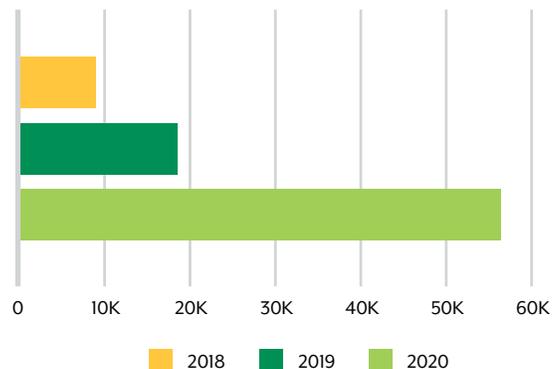
1,257

Number of RCUH employees and supervisors who attended eTimesheet training (either in person or online) in 2020

1,683

Number of RCUH employees who transitioned to the new eTimesheet system as of Dec. 31, 2020

eSIGN DOCUMENT COMPLETIONS



ONLINE TRAINING

RCUH's online training resources received more attention as projects sought training opportunities for their staff due to the state's stay-at-home order. New enrollments in the RCUH Training Portal surged between March and May with the creation of 577 new accounts. A second surge of 410 new enrollments occurred in August when the University of Hawai'i mandated that all employees, including RCUH employees, complete the COVID-19 UH Employee Safety Training. By the end of the year, 2,747 individuals were enrolled in the RCUH Training Portal, an increase of 109% from 2019. In addition, those learners completed 6,143 online courses.

With social gathering restrictions, social distancing, and a mostly remote workforce, training delivery pivoted from live, in-person presentations to virtual Zoom webcasts. Prior to the pandemic, RCUH conducted seven in-person training sessions on electronic timesheets for 148 attendees at various campuses. From then on, 21 virtual training sessions covering eTimesheets, formula funds, annual performance evaluations, FFCRA, and core staff professional development were delivered exclusively via Zoom webcast to 1,440 attendees.

FINANCIAL PORTAL UPGRADE

In November 2020, RCUH upgraded its Financial Portal so that only one login is required for individuals with multiple user types. Previously, users needed to maintain different usernames and passwords based on each user type. This improvement allows for more efficiency as individuals are able to switch between different user types within the Financial Portal (e.g., Principal Investigator, Fiscal Administrator, Secondary User). It also gave Financial Portal users the ability to delegate account access to a specific project account.



ONLINE TRAINING NUMBERS

86

Percentage of online learners who strongly agreed/agreed that the overall quality of RCUH-produced training is high

90

Percentage of online learners who strongly agreed/agreed that information was clearly presented in RCUH-produced training

121

Percentage increase in online course completions and training video views from 2019 to 2020

397

Number of online courses available on-demand in the RCUH Training Portal

PROJECT SPOTLIGHT

LEADERS RELY ON UHERO FORECASTS TO MAP ECONOMIC RECOVERY

At the end of 2019, Hawai'i's economy entered a soft patch but the new year looked promising—visitor arrivals exceeded 10 million for the first time, unemployment remained low, and oil prices were relatively stable...no one could have predicted that a worldwide pandemic was just around the corner.

When news of the coronavirus first appeared, the University of Hawai'i Economic Research Organization (UHERO) initially anticipated a fallout in the visitor industry similar to the decline from the 2003 SARS outbreak. Back then, Hawai'i tourism experienced a sharp decrease in international visitors and visitor spending, but quickly bounced back when the virus died off.

This would not be the case in 2020.

With so many unknowns surrounding this new virus, UHERO economists noted that the severity of the fallout would depend on the length of the epidemic and dispersion of the virus, which quickly spread throughout Asia, Europe, and North America. Between mid-February and the first week of March, UHERO economists witnessed a steep drop in international and domestic travel to the state and quickly realized that this epidemic would significantly impact Hawai'i's economy. The impending threat thrust UHERO into the limelight as politicians, business leaders, and the general public were looking for answers on what's to come.

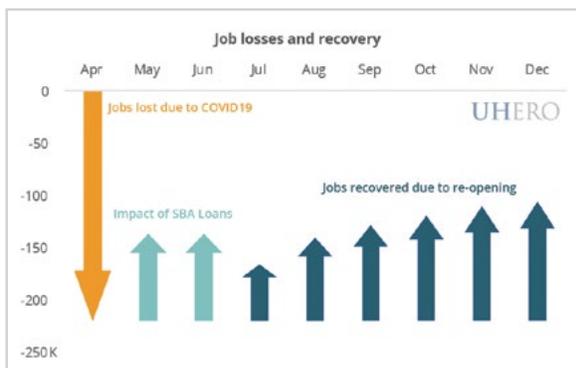
"COVID-19 has brought the longest period of economic expansion in modern history to an abrupt halt," said UHERO Executive Director



Carl Bonham. “Making good business and public policy decisions in such a rapidly-changing environment requires data that is as timely as possible.”

With the onset of COVID-19 in March, UHERO pivoted from its fundamental research and service tasks, and redirected significant resources to COVID-19 research and analysis. The organization also updated its quarterly economic forecasts to provide baseline, optimistic, and pessimistic scenarios based on the uncertain variables in the pandemic. Specific COVID-related research efforts include the following:

- visualizing the spatial distribution of unemployment claims across the state,
- analyzing the increasing need for rental assistance,
- developing strategies for restoring the state government’s fiscal balance, and
- conducting small-business surveys to improve UHERO’s understanding of how COVID-19 is impacting local businesses at the state and county levels.



To better understand how COVID-19 impacted Hawai‘i’s rental market, UHERO partnered with real estate groups to launch a monthly survey of local rental property owners and managers. A total of 271 landlords and property managers provided data on 6,719 rental units across the state. They noted that prior to the pandemic, 95% of tenants paid their rent by the 15th of the month, but

20.2%

Hawai‘i’s unemployment rate in Q2 of 2020, according to UHERO’s Economic Pulse index. The tool tracks the state’s economic data, such as visitor arrivals, job postings, and restaurant activity.

on August 15th, that percentage dropped to 8.5%, while severe delinquencies of 30-60 days increased from 3% to 8%. While 5% may not seem like a drastic increase, this represents 9,000 households.

As the pandemic devastated the state’s tourism-dependent economy, UHERO joined forces with the Hawai‘i COVID Collaborative—a hui of health care, business, and nonprofit leaders working together to address unmet needs for public information in the community. Together, the group launched the COVID Pau project, which helped to provide real-time, at-a-glance information and other resources to educate and motivate Hawai‘i’s residents to stop the spread of the virus. UHERO staff were also sought out to present their findings to the State House Select Committee on COVID-19 and were requested to appear on a variety of panels and webinars to discuss plans for re-opening and recovery.

“During times of great uncertainty and unprecedented decline in economic activity, it is vital that the public and policymakers have access to unbiased and rigorous analysis that is supported by timely and accurate data,” Bonham said. “UHERO has provided and will continue to provide that support to our island communities as we transition to a post-COVID Hawai‘i.”

GOFARM HAWAI'I HELPS LOCAL FARMERS PIVOT DURING THE PANDEMIC

Farming is a hard life. There are many challenges—land availability, droughts, human and financial resources, crop sustainability, weather—and, some might argue, few rewards. But farming in Hawai'i is gaining traction as a sustainable career with the support of programs like GoFarm Hawai'i.

Since 2003, GoFarm Hawai'i (GFH) has been “growing” local farmers. It took root as the Agribusiness Incubator Program in the University of Hawai'i College of Tropical Agriculture and Human Resources (CTAHR) and has expanded to include six training sites across four islands. GFH provides classroom learning and hands-on experience to aspiring farmers, while offering one-on-one business consulting for both new and existing agricultural producers in Hawai'i.

Like most businesses around the globe, COVID-19 forced GoFarm Hawai'i to change gears. As restrictions changed, sales to wholesale buyers and restaurants decreased, while demand for direct-to-consumer models increased. Workshops went virtual and centered around pivoting business models toward accessing the direct-to-consumer market, weathering the shift in tourism, and navigating government relief programs. GFH staff also developed and promoted a statewide “Find Your Farmer List” to support local growers and the increased demand for local produce.

“It's been a big wake-up call how tenuous being so dependent on imports can be,” said GFH Director Janel Yamamoto. “We have seen a considerable increase in the number of consumers purchasing locally grown food and we've also seen a rise in interest from younger and recently-unemployed individuals who are looking for a new career.”



Maricar Souza holds a locally grown cabbage at GoFarm Hawai'i's Hilo site; photo by Andrew Richard Hara. Bottom right: Haley Miyaoka, owner of Ahiki Acres, transplants kale as part of GFH's AgIncubator Program.

GFH STATEWIDE BEGINNING FARMER TRAINING PROGRAM

- **AgCurious:** Free 2- to 3-hour session to learn about the program, commitment level
- **AgXposure:** Exposure to commercial farms, network with local farmers; 4-5 weekends
- **AgSchool:** Fundamental principles of production, practice on-farm techniques, learn to establish and maintain a 1,000 sq ft plot; 4-month program
- **AgPro:** Emphasis on commercial production, business topics, learn to establish and maintain a 5,000 sq ft plot; 6-month program
- **AgXcel:** Accelerated version of AgSchool and AgPro; 6-month program, min. 20 hours/week
- **AgIncubator:** Start an independent business growing crops on 1/8–1/4 acre provided by GFH; up to 3 years

With a renewed demand for training and a mission to enhance Hawai'i's food security, GFH continues to plow ahead. New training initiatives include the following:

- **Agritourism workshops:** In partnership with the Hawai'i Tourism Authority and other organizations, GFH will educate and encourage farmers to welcome both local and out-of-state visitors to their operation. This statewide initiative is supported by educational workshops, tours of established operations, and mini-grant opportunities.
- **GoFish Hawai'i Collaboration:** GFH is collaborating with CTAHR's Sustainable and Organic Agricultural Program and UH Sea Grant to develop a workshop series that teaches farmers how to integrate a small-scale aquaponics system into their land-based operations.
- **GoFarm Hawai'i Community Edition Video Series:** GFH is developing a video series that will educate and encourage community members to grow some of their own food. Videos will be supplemented with resources for new gardeners (e.g., gardening tips, where to purchase supplies).

**"WHILE IT'S LIKELY THAT
IN A POST-COVID WORLD,
SOME CONSUMERS WILL
RETURN TO THEIR PRE-COVID
SHOPPING HABITS, WE HOPE
THAT MANY WILL RECOGNIZE
AND CONTINUE TO REMEMBER
THE VALUE OF OUR LOCAL
PRODUCERS. SUPPORTING
LOCAL GROWERS WILL HELP
OUR HAWAI'I COMMUNITY
BUILD A MORE RESILIENT
LOCAL FOOD SYSTEM."**

*JANEL YAMAMOTO
GoFarm Hawai'i Director*



Photos courtesy GoFarm Hawai'i

ASTRONOMY COMMUNITY DISTRIBUTES MEALS, PROTECTIVE EQUIPMENT ON HAWAI'I ISLAND

Hawai'i's astronomy community is used to riding out turbulent times.

From protests to pandemics, these individuals have endured and remain committed to serving their local community. When the pandemic's economic strain reached Hawai'i Island in March 2020, Director Stephanie Nagata and her team from the Office of Maunakea Management (OMKM) wanted to pitch in.

OMKM Senior Advisor Wally Ishibashi took the lead and connected with The Food Basket, a Hilo-based nonprofit that provides food for the island's hungry. According to The Food Basket, demand for food has tripled since the COVID-19 crisis began, with calls coming in at all hours of the day. One of their greatest needs was drivers who could deliver meals to kūpuna, the physically challenged, and individuals with limited transportation. Ishibashi quickly responded to the call and recruited volunteers from Maunakea Observatories, UH's Institute for Astronomy, and Maunakea Observatories Support Services.

"It's not a hard ask when you ask astronomy people. They bend over backwards to do this," Ishibashi said. "They've taken a lot of negative publicity, but astronomy is always there. They always try help."

With a rotation of 80 to 100 volunteers, teams of astronomy personnel loaded boxes of meals into vehicles every Monday and delivered them to families across East Hawai'i—stretching from Hāmākua to Kalapana to Volcano. Due to strict COVID-19 protocols, volunteers had to leave boxes in garages or on doorsteps, and interaction was limited.

"After a while you make friends and they get to know the people helping them," Ishibashi said. "The need is real out there and people really need support at this time. It's not about recognition; this was doing the right thing for the right reason for our people and the community."

Rodrigo Romo shared a similar mindset during this public health crisis. As program director, he leads a small staff at the Pacific



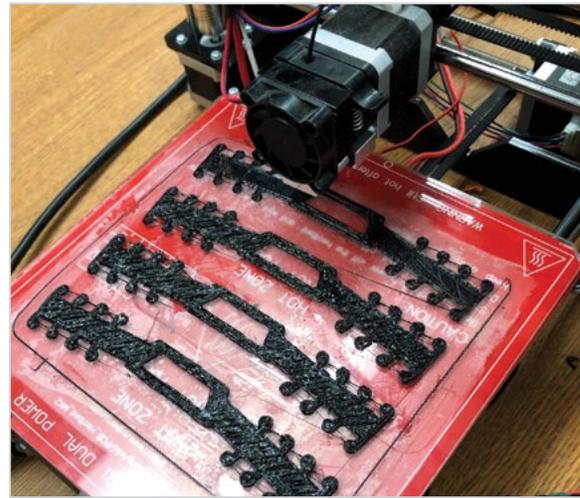
International Space Center for Exploration Systems (PISCES), a State-funded agency under the Department of Business, Economic Development, and Tourism.

At the onset of the pandemic, Romo received a call to help provide personal protective equipment (PPE) to first responders and healthcare providers on Hawai'i Island. Romo and his PISCES staff quickly agreed and joined the Hawai'i STEM Community Care Group, a new coalition formed in response to the COVID-19 crisis.

To address the shortage of PPE on the island, PISCES staff produced face shields and learned how to 3D-print mask relief straps by watching a YouTube video and modifying the design to increase material efficiency and printing speed. The simple piece of equipment was a hit at Hilo Medical Center, and orders eventually expanded to private healthcare clinics, firefighters, and other community service providers. "We pride ourselves in being a contributing member of the community. It was not critical equipment we were providing, but it was something that would make their lives more comfortable," Romo said.

"AS DIFFICULT AND WEIRD THIS YEAR HAS BEEN, THE WAY THE COMMUNITY HAS COME TOGETHER HAS BEEN QUITE REWARDING."

RODRIGO ROMO
PISCES Program Director



PISCES staff used 3D printers to create hundreds of free mask relief straps to first responders and healthcare providers on Hawai'i Island; photo courtesy PISCES.

One of the more complex innovations to come out of this coalition was an N95 Mask Ultraviolet Irradiator, which would allow healthcare workers to sterilize and reuse N95 masks, should the need arise. Romo added that it's something you build, hoping you'll never have to use it. PISCES developed the first prototype with the Canada-France-Hawaii Telescope based off of a design by a Colorado firefighter. The two groups partnered with the UH Hilo Biology Department and ran tests for months on exposure time, disinfection rate, and material degradation. The final product provided twice as much radiation power as the original design and also incorporated safety improvements, such as a built-in timer and kill switch.

"When you put together inquisitive minds into a group and start troubleshooting ways to make things better or easier, you come up with some pretty interesting results," Romo said. "One of the nice things about the community here is that it's very easy to make a difference, to make an impact."

Photos on p.14: (left) OMKM's Wally Ishibashi and Maunakea Observatories Support Services' Stewart Hunter helped load boxes of food into delivery vehicles; photo courtesy Maunakea Observatories/UH News. (right) Patti Freeman, from the Canada-France-Hawaii Telescope, helped distribute Halloween treats and information for families at The Food Basket's Honoka'a pick-up; photo by Sarah Anderson.



PANDEMIC PRESENTS UNIQUE OPPORTUNITY FOR HIMB RESEARCHERS AT HANAUMA BAY

The year 2020 will be remembered mostly for a global pandemic, but it was also a year that many gained an appreciation for the diligent work of researchers and scientists.

One dedicated team from the University of Hawai'i at Mānoa has been studying Hanauma Bay since 1999. "Of the many unforeseen circumstances presented by the COVID-19 pandemic, the reduced human presence has presented a unique opportunity to better understand and manage our impacts on the natural environment of the Hanauma Bay Nature Preserve," said Ku'ulei Rodgers, an associate researcher at the Hawai'i Institute of Marine Biology (HIMB).

As the most popular snorkeling location in Hawai'i, Hanauma Bay typically averages 3,000 visitors a day. With this abundance of visitors trampling over coral and interacting with marine life, the Coral Reef Ecology Lab closely monitors this internationally-recognized tourist attraction, in addition to 65 sites spanning six Hawaiian islands. According to Dr. Rodgers, not only is the bay a unique and culturally significant landmark, but it is also vital to maintain and protect

the bay as an economic, educational, and recreational benefit to the state.

"Hanauma Bay is not challenged by managing marine resources, as much as it is challenged by how to most effectively manage the people," Rodgers said.

March 16, 2020, marked the last day the nature preserve welcomed visitors before the City & County of Honolulu's supplemental emergency COVID-19 proclamation. The extended closure gave Dr. Rodgers and her team an uninterrupted opportunity to study Hawai'i's first Marine Life Conservation District. During this time, HIMB researchers conducted several biological surveys to track changes in fish behavior and feeding in the absence of human pressure. Anecdotally, the research unit observed larger fishes, fish expanding their range through the bay, and an increase in monk seal sightings.

However, the biggest change since the bay's closure was the remarkable improvement in water clarity. According to Dr. Rodgers, "On average the bay is 64% clearer during the COVID-19 closure than on a day open to the public, and 14% clearer during the COVID-19

"TEN VISITORS WHO DO NOT UNDERSTAND CORAL REEFS AS A LIVING RESOURCE CAN PRODUCE SIMILAR DAMAGE TO 1,000 VISITORS WHO ARE AWARE."

KU'ULEI RODGERS

HIMB Associate Researcher

closure than on Tuesdays when closed to the public. The increase in clarity comparing days closed to the public and COVID-19 days was surprising because it shows that some suspended particles do not have enough time to settle out of the water column within 24 hours. Water clarity is an important indicator for coral health since corals use light as an energy source and sediment deposition on corals can reduce vitality."

In collaboration with other groups, such as the State of Hawai'i Division of Aquatic Resources, UH Fisheries Ecology Research Lab, and the Elizabeth Madin Marine Ecology and Conservation Lab at HIMB, the HIMB Coral Reef Ecology Lab continues research in a number of areas that will yield rich comparative data before and after the COVID-19 closure, such as the following:

- Level of stress fish encounter in their environment
- Fish foraging behavior
- Growth rates of branching corals
- Coral bleaching surveys
- Green sea turtle populations
- Monk seal encounters

Data that the team collects and analyzes is summarized and used to recommend different strategies to mitigate stressors on the bay. City and state agencies, as well as the general public, can use these reports to drive meaningful policy change, conservation, stewardship, and education. Dr. Rodgers is hopeful that science will prevail in sustainable management of these overwhelmed natural resources.

"As researchers, we provide the data and recommendation to managers to make sound decisions. Our research develops important baselines that can be compared through changes over time," Rodgers said. "By linking indicators of stress with potential causes, we can better understand the dynamics of human use. This leads to management strategies that are based on scientific evidence that are more likely to succeed in conservation and restoration efforts."



HIMB's Andrew Graham and Sarah Severino measure the water clarity at Hanauma Bay during the nature preserve's shutdown. Photo on p. 16: Panoramic view of Hanauma Bay; photos courtesy HIMB.

AWARDS & HONORS

OUTSTANDING EMPLOYEE OF THE YEAR AWARDS

RCUH typically holds an annual luncheon to recognize Outstanding Employee of the Year nominees, but the celebratory event was canceled due to the pandemic. In lieu of an in-person ceremony, RCUH worked with the Principal Investigators of the three first-place awardees to schedule surprise virtual meetings with the RCUH Executive Director.

RESEARCHER/PROJECT MANAGER/PROFESSIONAL CATEGORY



1st Place: David Cohen, UH College of Natural Sciences

David led his team in retrofitting an old shrimp aquaculture facility to create a large-scale sea urchin hatchery at the Ānuenuē Fisheries Research Center. Now approaching its 10-year anniversary, this 24/7 operation has released 600,000 sea urchins in Hawaiian waters. Their release has controlled invasive seaweed in over 270 acres of reefs, allowing other native marine species to thrive. It is the single-most successful marine invasive species control project in Hawai'i to date.



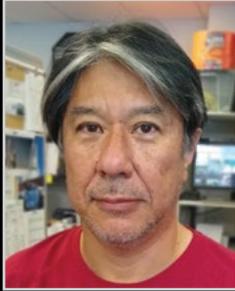
2nd Place: Michael von Platen, UH John A. Burns School of Medicine

Michael single-handedly designed and coordinated the transition and integration of a complex AV system for simulation-based education. This improved the entire JABSOM student body's preparedness for a critical national qualification examination. His forward thinking also helped transition a significant portion of curriculum to e-learning, which became crucial during the COVID-19 work-at-home restrictions.

Honorable Mentions:

- **Fritzie Celino-Brady**, UH College of Tropical Agriculture and Human Resources
- **Serge Chastel**, UH Institute for Astronomy
- **Stan Fichtman**, Kapi'olani Community College
- **Mark Huber**, UH Institute for Astronomy

PROJECT SUPPORT STAFF CATEGORY



1st Place: Yoshitake Nabeshima, Subaru Telescope

Few can claim that they saved their project \$400,000, but Yoshitake can! When Subaru Telescope's Cassegrain image rotator needed to be removed and repaired, the manufacturer recommended that telescope operations be shut down for two months. Yoshitake singularly came up with the idea of using dummy weights as a substitute for the rotator during the repair. This significantly reduced the repair time to three weeks, accomplished without loss of observation time.



2nd Place: Hope Ronco, UH School of Ocean and Earth Science and Technology

Transporting four monk seals from the Ke Kai Ola rehabilitation hospital to Midway Atoll is a high-stakes mission, made even more challenging during a pandemic. Hope facilitated meetings, ensured staff were trained, and developed contingency plans should the USCG need to abort the transport. Because of her contributions, this life-saving mission was carried out safely, efficiently, and with great satisfaction from all partners involved.

Honorable Mentions:

- Dawn Namahoe Sidman, UH Hilo
- Mary Jo Riehm, UH Hilo
- Sean Tanimoto, Applied Research Laboratory at the University of Hawai'i

TEAM CATEGORY



1st Place: Maunakea Weather Center

Tiziana Cherubini, Ryan Lyman

Because of the sustained effort by Tiziana and Ryan, MKWC astronomical weather forecasts are considered the best in the world—a result of complex global and local data gathering, the application of custom weather algorithms, and specialized insights gained from years of experience.



2nd Place: Applied Research Laboratory at the University of Hawai'i

Benjamin Jones, Joshua Levy, Ted Ralston, Aricia Argyris

This team worked with the U.S. Pacific Fleet Submarine Force to develop a delivery-and-capture system for small unmanned aircraft systems (sUAS). They also trained Navy personnel to operate sUAS from shore and from onboard the submarine.

UH EXCELLENCE IN RESEARCH AWARDS

In 2020, RCUH provided a \$5,000 cash award to each faculty recipient of the Regents Medal for Excellence in Research. Additionally, RCUH provided a \$500 cash award to each student recipient of the Office of the Vice Chancellor for Research Student Excellence in Research Award.

FACULTY RECIPIENTS



Daniel Huber, UH Mānoa, Institute for Astronomy

Daniel is a world leader in the study of stars and exoplanets, combining data from NASA space missions with observations using ground-based telescopes in Hawai'i. Since 2017, he has been the principal investigator on 12 extramural grants totaling more than \$1.6 million of research funding.



Qing Li, UH Mānoa, College of Tropical Agriculture and Human Resources

Qing's research addresses fundamental issues in agricultural chemistry. He has maintained an active research program that has been supported with \$19 million in extramural grants in the past 24 years.



Mari Yoshihara, UH Mānoa, College of Arts and Humanities

Mari is a scholar and writer specializing in U.S. cultural history, U.S.-Asia relations, Asian-American studies, women's/gender/sexuality studies, literary and cultural studies. Much of her scholarship examines the politics of cultural encounters between the United States and East Asia.

STUDENT RECIPIENTS



Joy Agner

Joy is a doctoral student in psychology in the Community and Cultural and Developmental program. Her research focuses on improving health systems and policy for marginalized populations, such as people in poverty and those with chronic disability or severe mental illness.



Marley Aiu

Marley is a junior majoring in English and dance with honors. She is also a literary editor, researcher, choreographer, dancer, poet, educator and advocate. Her research aims to understand how embodiment, dance, and queerness (LGBTQIA+ identities) inform one another.



Zhoujian Zhang

Zhoujian joined the Institute for Astronomy in 2015. His research focuses on gas-giant planets and brown dwarfs (higher-mass versions of planets) that are orbiting other stars. Using telescopes on Maunakea and Haleakalā, he has conducted the largest search to date of these objects.

FINANCIAL STATEMENTS

**RESEARCH CORPORATION OF THE UNIVERSITY OF HAWAI‘I
STATE OF HAWAI‘I
Fiscal Years Ended June 30, 2020 and 2019 and 2018**

Condensed Statements of Net Position (Unaudited)

The Corporation's assets and deferred outflows of resources, liabilities, deferred inflows of resources, and net position at June 30, 2020, 2019 and 2018 are summarized below:

	<u>2020</u>	<u>2019</u>	<u>2018</u>
Current assets	\$ 40,880,000	\$ 42,071,471	\$ 38,856,460
Noncurrent assets	1,750,000	--	--
Capital assets	<u>3,260,152</u>	<u>3,216,587</u>	<u>3,144,704</u>
Total assets	45,890,152	45,288,058	42,001,164
Deferred outflows of resources	<u>189,550</u>	<u>54,722</u>	<u>68,233</u>
Total assets and deferred outflows of resources	\$ <u>46,079,702</u>	\$ <u>45,342,780</u>	\$ <u>42,069,397</u>
Current liabilities	\$ 31,291,424	\$ 30,718,857	\$ 27,927,110
Noncurrent liabilities	<u>4,919,604</u>	<u>4,568,448</u>	<u>4,872,485</u>
Total liabilities	36,211,028	35,287,305	32,799,595
Deferred inflows of resources	<u>453,086</u>	<u>501,065</u>	--
Total liabilities and deferred inflows of resources	36,664,114	35,788,370	32,799,595
Net position			
Invested in capital assets	3,260,152	3,216,587	3,144,704
Unrestricted	<u>6,155,436</u>	<u>6,337,823</u>	<u>6,125,098</u>
Total net position	<u>9,415,588</u>	<u>9,554,410</u>	<u>9,269,802</u>
Total liabilities, deferred inflows of resources and net position	\$ <u>46,079,702</u>	\$ <u>45,342,780</u>	\$ <u>42,069,397</u>

To view RCUH's complete audited financial statements for FY 2020, please visit
<https://www.rcuh.com/rcuh-fy2020-audit/>.

**RESEARCH CORPORATION OF THE UNIVERSITY OF HAWAII
STATE OF HAWAII
Fiscal Years Ended June 30, 2020 and 2019 and 2018**

Condensed Statements of Revenues, Expenses and Changes in Net Position (Unaudited)

The Corporation's statements of revenues, expenses and changes in net position for the fiscal years ended June 30, 2020, 2019 and 2018 are summarized as follows:

	<u>2020</u>	<u>2019</u>	<u>2018</u>
Operating revenues			
University of Hawai'i	\$ 7,760,462	\$ 7,398,495	\$ 6,970,732
Other sponsor agencies	<u>593,243</u>	<u>794,121</u>	<u>681,275</u>
Total operating revenues	8,353,705	8,192,616	7,652,007
Operating expenses			
Personnel costs	4,673,097	4,382,802	4,213,586
Data processing services	1,609,753	1,548,963	1,223,071
Depreciation	764,318	682,072	570,588
Project development	500,000	502,616	541,357
Insurance	436,680	421,271	407,314
Office and equipment rental	288,606	232,579	227,932
Professional and technical support	196,445	226,183	211,441
Training material development	68,679	27,812	120,918
Other expenses	<u>510,315</u>	<u>537,255</u>	<u>500,195</u>
Total operating expenses	<u>9,047,893</u>	<u>8,561,553</u>	<u>8,016,402</u>
Operating loss	(694,188)	(368,937)	(364,395)
Nonoperating revenues			
Intergovernmental (Federal awards)			
Revenue	191,730	18,488	--
Expense	(191,730)	(18,488)	--
Interest Income	<u>555,366</u>	<u>653,545</u>	<u>331,853</u>
Increase (decrease) in net position	(138,822)	284,608	(32,542)
Net position			
Beginning of year, as previously reported	9,554,410	9,269,802	10,407,865
Restatement due to change in accounting principle	<u>--</u>	<u>--</u>	<u>(1,105,521)</u>
End of year, as restated	<u>\$ 9,415,588</u>	<u>\$ 9,554,410</u>	<u>\$ 9,269,802</u>

To view RCUH's complete audited financial statements for FY 2020, please visit
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**RESEARCH CORPORATION OF THE UNIVERSITY OF HAWAI'I
STATE OF HAWAI'I
Fiscal Years Ended June 30, 2020 and 2019 and 2018**

Condensed Statements of Cash Flows (Unaudited)

The Corporation's statements of cash flows for the fiscal years ended June 30, 2020, 2019 and 2018 are summarized as follows:

	<u>2020</u>	<u>2019</u>	<u>2018</u>
Operating activities			
Cash received from operations	\$ 7,605,984	\$ 8,895,337	\$ 7,410,407
Cash payments for operations	(8,192,458)	(7,852,458)	(7,341,636)
Project expenditures and reimbursements, net	<u>(7,919,874)</u>	<u>5,145,869</u>	<u>8,084,230</u>
Net cash provided by (used in) operating activities	(8,506,348)	6,188,748	8,153,001
Financing activities			
Capital	<u>(807,883)</u>	<u>(753,955)</u>	<u>(1,218,081)</u>
Net cash used in financing activities	<u>(807,883)</u>	<u>(753,955)</u>	<u>(1,218,081)</u>
Investing activities	<u>(3,367,382)</u>	<u>8,533,247</u>	<u>(1,077,350)</u>
Increase (decrease) in cash	(12,681,613)	13,968,040	5,857,570
Cash			
Beginning of year	<u>27,981,193</u>	<u>14,013,153</u>	<u>8,155,583</u>
End of year	<u>\$ 15,299,580</u>	<u>\$ 27,981,193</u>	<u>\$ 14,013,153</u>

To view RCUH's complete audited financial statements for FY 2020, please visit
<https://www.rcuh.com/rcuh-fy2020-audit/>.

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