clerks@guamlegislature.org

From: Speaker's Office <speaker@guamlegislature.org>
Sent: Tuesday, September 8, 2020 11:16 AM
To: Clerks Office
Cc: Rennae Meno
Subject: M&C Fwd: Letter for Governor and Speaker re UOG *urgent* need for no less than $27.7M and SFAP at $4.3M
Attachments: UOG-FY21-Budget-Letter-Gov-090820.pdf; 2020-UOG-Economic-Impact-Infosheet-August2020.pdf; UOG-Economic-Impact-Report-August2020.pdf

09-08-20	9:36 AM	09-08-20	Letter for Governor and Speaker regarding FY21 General Appropriation and SFAP Budgets.*	University of Guam	35GL-20-2193

Sinseru yan Minagåhet,

Office of the Speaker • Tina Rose Muña Barnes
Committee on Public Accountability, Human Resources & the Guam Buildup

35th Guam Legislature
I Mina'trentai Singko na Liheslaturan Guåhan

Guam Congress Building | 163 Chalan Santo Papa | Hagatna, GU 96910
T: (671) 477-2520/1
speaker@guamlegislature.org

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Gumai pribilehu yan konfedensia este siha na mensåhi. Solo espesiåtmente para hågu ma entensioña pat ma aturisa para unrisibi. Sen prubidu kumu ti un ma aturisa para manribisa, na'setbe, pat mandespåtcha. Yanggen lachi rinisibu-mu nu este na mensåhi , put fabot ago' guatu gi I numa'huyong gi as speaker@guamlegislature.org yan despues destrosa todu siha I kopian mensåhi. Si Yu'os ma'åse'.

---------- Forwarded message ---------
From: **Krise, Thomas** <tkrise@triton.uog.edu>
Date: Tue, Sep 8, 2020 at 9:36 AM
Subject: Letter for Governor and Speaker re UOG *urgent* need for no less than $27.7M and SFAP at $4.3M
To: Gov. Lourdes A. Leon Guerrero <governor@guam.gov>, Office of the Governor of Guam <communications@guam.gov>, speaker@guamlegislature.org <speaker@guamlegislature.org>

Cc: Joshua F Tenorio <joshua.tenorio@guam.gov>, officeofsenatorshelton@guamlegislature.org <officeofsenatorshelton@guamlegislature.org>, senatorjoessanagustin@gmail.com <senatorjoessanagustin@gmail.com>, Jon Junior M Calvo <jon.calvo@guam.gov>

Please see attached letter and supporting documents. Si Yu'os ma'åse'.

--
Si Yu'os ma'åse',

Thomas W. Krise, Ph.D.
President and Professor of English

Office of the President
Office: +1 (671) 735-2990
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OFFICE OF THE PRESIDENT

September 8, 2020

THE HONORABLE LOURDES A. LEON GUERRERO
Maga'hågan Guåhan
Ricardo Bordallo Governor's Complex
Hagåtña, Guam 96910

THE HONORABLE TINA ROSE MUÑA BARNES
Speaker
I Mina'trentai Singko Na Liheslaturan Guåhan
Guam Congress Building
163 Chalan Santo Papa
Hagåtña, Guam 96910

Re: University of Guam FY21 General Appropriation and SFAP Budgets

Dear Governor Leon Guerrero and Speaker Barnes:

On behalf of the Board of Regents (BOR), students, faculty, staff and administrators at the University of Guam, I am requesting your consideration for a flat appropriation of **$27.7M** for general operations and a Student Financial Aid Program budget of **$4.3M** for FY21 in a revised or substitute budget bill.

The appropriation of $26.06M in Bill 282-35 would irreparably damage our operations. It is over $10M less than our FY21 budget request. Over the last five years, cuts to our appropriations and an erratic allotment schedule have depleted our reserves, deferred maintenance, frozen hiring resulting in a strained workforce, and slowed growth during a time when we received commendations from WASC-SCUC, launched a new School of Engineering, and developed a federal research grants operation among the top in the nation for our size.

Our ability to sustain this pattern is at its end and now runs the risk of compromising the University's ability to meet in part WASC Accreditation Standard 7: "Sustainability: Financial Viability; Preparing for the Changing Higher Education Environment." The University will have to explain its ability to support the academic enterprise, which includes student support and success and sufficient faculty to support academic quality. Continued budgetary shortfalls in funding for facilities maintenance, faculty vacancies, and direct student support are major causes for concern.

Though a flat appropriation of $27.7M would still limit us significantly, it would allow us to maintain our nursing and healthcare degree and community programs, avoid furloughs to academic and unclassified personnel, and invest in improved learning resources and support to our students.

Even if you are unable to make the requested investments in the substitute budget, I hope that you will find any supplemental appropriations that might bridge the gap over the course of the year.

Disinvestment in the University of Guam

From 2015-2018, the University was subject to annual cuts to its appropriation and sporadic withholding of cash allotments which caused a strain on UOG operations and depleted much of our cash reserves. Every year, we put forward conservative budget requests that would have set up UOG to grow important programs in fields such as nursing, social work, the sciences, and our new civil and environmental engineering programs. But every year, we are met with lower appropriations than the year before. Year after year, it appears our government disinvests in its only University — an institution that is critical to the growth and future success of our island community and that of our region.

The enclosed Economic Impact Report conducted by resident economist Dr. Maria Claret Ruane makes a case for UOG being among the best investments that GovGuam and our community can make. According to the study, in FY19 the University of Guam:

- Infused $349M into Guam's economy — an **economic multiplier of 4.06 times** UOG's total expenditure of $86M.
- Contributed $1 of every $17 in Guam's economy;
- Created one in every 15 jobs on Guam;
- Generated $1 of every $8 in GovGuam tax revenues.

GovGuam's investment in UOG yields great returns for Guam through an educated and higher earning professional workforce, job creation across all industries, and tax dollars infused into the government of Guam to fund public services.

Nursing and Healthcare Programs At Risk

Our School of Health had planned to grow nursing program cohorts to 40 students, to continue to provide training programs for certified nursing assistants and caregivers, and to provide professional development for the nursing/nursing assistant workforce, improve geriatric and dementia care, increase diversity, and more. However, a lack of funding translates into an inability to hire faculty and administrative support, and limits our capability to pursue, win, and implement federal grants to train our local healthcare workers.

This inability to hire faculty and administrative and student support personnel under our School of Health could lead to accreditation issues with both our nursing and social work programs and will limit the health care workforce development.

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With 100% NCLEX pass rates for several years, our nursing students are among the highest performing in the nation. They are also among the most committed to our community. During the pandemic, our current students and our School of Health faculty and alumni, have been working tirelessly in our island's response and relief efforts. The Governor, DPHSS, GMHA, and others all have spoken publicly about just how important homegrown nursing and healthcare workers are to our community.

We need your funding support to continue this work.

Launching the School of Engineering

For many years, our island community and our students asked for a full-fledged engineering program. In 2019, UOG launched its bachelor of science in civil and environmental engineering and is currently pursuing ABET accreditation. Some of the best and brightest minds in Guam can now stay on island and earn an engineering degree.

Our engineering faculty perform important work for Guam's community including monitoring the quality of the island's natural water supply and operating the Water Environmental Research Institute (WERI) which is in the top 12 water research institutes in the United States.

Our 150+ students in the engineering program need the University to be able to grow its science facilities, increase the availability of courses in STEM fields, and hire more faculty and administrative support personnel. Without the proper funding, we have not been able to appropriately develop this program to meet the high demand of our students.

Learning Resources and Student Support

GovGuam's disinvestment in UOG has also led to a disinvestment in learning resources and student support. The RFK Memorial Library maintains the island's most comprehensive academic knowledgebase. Each year, our library has faced budget cuts, and our students face a disadvantage of resources compared to other higher-ed institutions. Our libraries also include the Richard F. Taitano Micronesian Area Research Center (MARC) which is indispensable to the history of our island.

Plans and programs to improve student support services have also been delayed. One of our goals is to convert most processes to electronic and web-based for the convenience of our students. Over the course of the pandemic, it has become clearer that this move is necessary. We need to find a way to provide additional funding to our Office of Information Technology to hire technical staff and programmers.

Cut to Student Financial Aid Programs (SFAP)

We have also been subject to an annual decline in SFAP appropriations which provides local scholarships such as the merit scholarship, Pro-Tech, Yamashita Teacher Corps, Health Professions Training Scholarship nursing and social work students, and more. Bill 282-35 is $1M lower than our request of $4.3M. This severely limits the amount of awards we can make this year. During a time when students need more financial support, they are seeing their opportunities disappear. As we

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Doc. No. 35GL-20-2193.*

work to emerge from the pandemic recession, a renewed investment in student financial aid is more important than ever.

Our Students Desire Higher Education
Our Fanuchånan 2020 semester has just started, and to our amazement and delight, our enrollment is nearly the same as in 2019 at just over 3,400. This shows that even in an unprecedented time of uncertainty, our students desire and are committed to their education. They are committed to the betterment of their lives and the betterment of their island.

In turn, the University of Guam is committed to the success of our students. We will continue to ask and plead for our island's elected leaders to invest in UOG.

Governor Leon Guerrero, Speaker Barnes, and Senators, please demonstrate your continued commitment to our students by providing the funding support we need this fiscal year.

Sincerely,



Thomas W. Krise, Ph.D.
President

Enclosure:
UOG Economic Impact Report and Information Sheet

cc:
The Honorable Joshua F. Tenorio, *Sigundo Maga'låhen Guåhan*

The Honorable Joe S. San Agustin, Chair, Committee on General Government Operations, Appropriations, and Housing; and Office of Finance and Budget
I Mina'Trentai Singko Na Liheslaturan Guåhan

The Honorable Amanda L. Shelton, Chair, Committee on Higher Education and the Advancement of Women, Youth, and Senior Citizens
I Mina'Trentai Singko Na Liheslaturan Guåhan

The Honorable Senators of *I Mina'Trentai Singko Na Liheslaturan Guåhan*
Director, Bureau of Budget and Management Research
Board of Regents, University of Guam, and the University Community

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UNIVERSITY OF GUAM ECONOMIC IMPACT REPORT (FY19)

MARIA CLARET M. RUANE, PH.D.
Professor of Economics | University of Guam | August 2020

INVESTMENT IN GUAM'S FUTURE

Through its mission of ***Ina, Deskubre, Setbe*** (to enlighten, to discover, and to serve) UOG not only impacts the lives of its students and the communities it serves through academics, research, and service, but also builds up Guam's economy.

In FY2019, UOG received just $27.4M from its Government of Guam budget appropriation, but provides a major impact to Guam's economy through creating jobs, generating incomes and spending, buying local, and generating tax dollars."

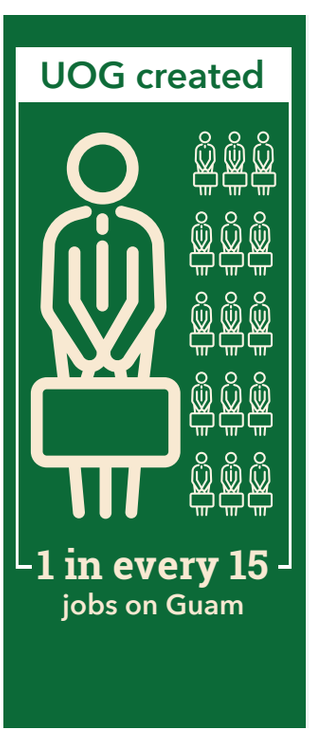
An investment in the University of Guam is an investment in Guam's future.



UOG CONTRIBUTED $1 OF EVERY $17 IN GUAM'S ECONOMY

UOG boosted Guam's economy, measured by nominal Gross Domestic Product (GDP), by $349 million. This translates to:

- 5.91% of the $5.92 billion measure of Guam's economy in 2018 (the latest data available);
- 4.06 times UOG's total expenditure of $86 million; and
- 12.72 times the $27.4 million budget appropriated to UOG by the Guam Legislature.

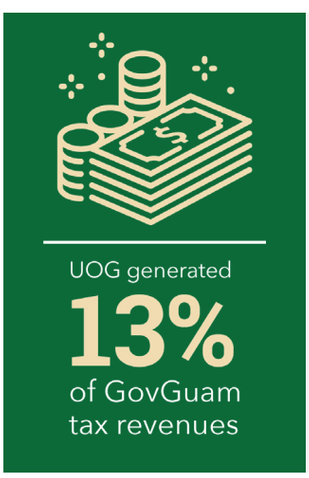


UOG CREATED 1 IN EVERY 15 JOBS ON GUAM

UOG created a total of 4,191 jobs (FTE) comprised of:

- 849 direct employees, i.e., employees by UOG (those in the Staffing Pattern and work-study students) and related units (RCUOG, UOGEF, GERF/KPRG and AmeriCorps);
- 206 indirect employees, i.e., employees that UOG suppliers/vendors were able to employ because of their business with UOG;
- 3,136 induced employees from the following sources:
  - 570 jobs created when direct jobholders, i.e., employees of UOG and related units spent their incomes;
  - 103 jobs created when indirect jobholders, i.e., employees by UOG on-island suppliers/vendors spent their incomes;
  - 240 jobs created when UOG on-island suppliers/vendors spent their incomes; and
  - 2,223 when UOG graduates spent their higher incomes, which resulted from their UOG degree.

The 4,191 jobs created by UOG make up 6.5% of the approximately 65,000 employees on Guam.



UOG GENERATED $1 OF EVERY $8 OF GOVGUAM TAX REVENUES

UOG generated $78.55 million of GovGuam taxes in the form of income taxes ($52.4 million), Medicare taxes ($10.1 million) and Gross Receipts Taxes ($16 million). In FY2019, this $78.55 million:

- was $51.15 million more than the $27.4 million budget appropriated by the Guam Legislature;
- accounts for 12.63% of all GovGuam tax revenues received in FY2019; and
- represented a 187% return on Guam taxpayers' money.

Visit www.uog.edu/economic-impact for the full report.

Doc. No. 35GI-20-2193 *

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ECONOMIC IMPACT REPORT

by Maria Claret Ruane, Ph.D.
Professor of Economics | University of Guam
August 2020

UNIVERSITY OF GUAM
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Doc. No. 35GL-20-2193.*

UOG ECOMOMIC IMPACT REPORT

CALCULATION OF UOG'S IMPACT ON GUAM'S ECONOMY (FY19)

Maria Claret M. Ruane, Ph.D., Professor of Economics, University of Guam

August 2020

SUMMARY OF RESULTS

In FY2019, UOG spent $86,197,243 and impacted Guam's economy in the following ways:

1. UOG CONTRIBUTED $1 OF EVERY $17 IN GUAM'S ECONOMY

UOG boosted Guam's economy, measured by nominal Gross Domestic Product (GDP), by $349 million. This translates to:

- 5.91% of the $5.92 billion measure of Guam's economy in 2018 (the latest data available);
- 4.06 times UOG's total expenditure of $86 million; and
- 12.72 times the $27.4 million budget appropriated to UOG by the Guam Legislature.

2. UOG CREATED 1 IN EVERY 15 JOBS ON GUAM

UOG created a total of 4,191 jobs (FTE) comprised of:

- 849 direct employees, i.e., employees by UOG (those in the Staffing Pattern and Federal Work-Study) and related units (RCUOG, UOGEF, GERF/KPRG and AmeriCorps);
- 206 indirect employees, i.e., employees that UOG suppliers/vendors were able to employ because of their business with UOG;
- 3,136 induced employees from the following sources:
    - 570 jobs created when direct jobholders, i.e., employees of UOG and related units spent their incomes;
    - 103 jobs created when indirect jobholders, i.e., employees by UOG on-island suppliers/vendors spent their incomes;
    - 240 jobs created when UOG on-island suppliers/vendors spent their incomes; and
    - 2,223 when UOG graduates spent their higher incomes, which resulted from their UOG degree.

The 4,191 jobs created by UOG make up 6.5% of the approximately 65,000 employees on Guam.

3. UOG GENERATED $1 OF EVERY $8 OF GOVGUAM TAX REVENUES

UOG generated $78.55 million of GovGuam taxes in the form of income taxes ($52.4 million), Medicare taxes ($10.1 million) and Gross Receipts Taxes ($16 million). In FY2019, this $78.55 million:

- was $51.15 million more than the $27.4 million budget appropriated by the Guam Legislature;
- accounts for 12.63% of all GovGuam tax revenues received in FY2019; and
- represented a 187% return on Guam taxpayers' money.

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TABLE 1
SUMMARY OF UOG'S TOTAL IMPACT ON GUAM'S ECONOMY

	Direct Impact	Indirect Impact	Induced Impact	Total Economic Impact
Jobs (FTE)	**849**	**206**	**3,136**	**4,191**
Overall Incomes	**$39,914,518**	**$24,046,414**	**$285,630,711**	**$349,591,643**
Taxes	**$7,144,699**	**$5,995,949**	**$65,409,433**	**$78,550,081**
Income Taxes	$5,987,178	$3,606,962	$42,844,607	$52,438,746
Medicare Taxes	$1,157,521	$697,346	$8,283,291	$10,138,158
Gross Receipts Taxes		$1,691,641	$14,281,536	$15,973,177

Note: Author's own calculation.

PURPOSE

This report presents the calculation of the impact that the University of Guam (UOG) has on Guam's economy. The main focus will be on additional economic activity and overall income, additional jobs and additional taxes that result from UOG's existence on Guam.

METHODOLOGY[1]

The methodology used here was first developed by C. Ruane in June 2012, refined in July 2018 and further improved upon for use in this latest calculation. It was developed because Guam's limited data does not allow use of IMPLAN (See APPENDIX A). This methodology was used in the past on two different applications, both of which were accepted by two different federal government agencies.

DATA SOURCES

The above-referenced methodology was developed using the following data sources:

- *2017 Economic Census for the Island Areas*, which was released by the U.S. Census Bureau on January 31, 2020; and
- *Current Employment Statistics*, which is published quarterly by the Guam Department of Labor-Bureau of Labor Statistics, with the latest for March 2019.
- *2018 Guam Domestic Product*, which is published by the U.S. Department of Commerce-Bureau of Economic Analysis.

[1] This report and subsequent versions of it will be owned by UOG but the above-referenced methodology will remain owned by the author.

DEFINITIONS

- *Full-Time Equivalent (FTE)* is the measurement used for all job calculations in this report, with Full-Time employment defined as 40 work hours per week, 52 weeks per year.
- *Direct jobs* are those jobs that establish an employer-employee relationship between the commercial enterprise and the persons that they employ, in this case, between UOG and UOG employees. From several sources and the author's calculations/estimations, the number of employees by UOG and related units was 849.
- *Indirect jobs* are the jobs held by persons who work for the producers of materials, equipment, and services that are used in a commercial enterprise's capital investment project, but who are not directly employed by the commercial enterprise, in this case, employees by UOG suppliers/vendors.
- *Induced jobs* are those jobs created when direct and indirect employees go out and spend their increased incomes on consumer goods and services, in this case, when UOG employees and employees by UOG suppliers/vendors spend their incomes to buy goods and services sold (but not necessarily produced) on Guam.
- *Local spending multiplier* is the amount of overall spending on Guam's economy not including spending for purchases from Guam-based military base stores, online sources of off-island vendors. This was estimated by Ruane (2011b, December) at 1.30.

UOG DATA

UOG data used in this report include

- *2020 UOG Alumni Survey*
- *UOG Staffing Pattern FY2019 Fourth Quarter*
- *UOG Payments by Vendor List FY2019*
- *UOG Expenditures by Function FY2018 and FY2019*
- *Payroll data for UOG and related units (UOGEF, RCUOG, GERF/KPRG and Americorps)*
- *Annual Credit Card Statements*

CALCULATIONS

Calculation of UOG' Direct Impact on Jobs, Incomes and Taxes

The *UOG Staffing Pattern FY2019 Fourth Quarter* and Payroll Reports provided by the Office of Information Technology (OIT) were used to calculate direct jobs created by UOG and by UOG-related units to include the Research Corporation of UOG (RCUOG), the UOG Endowment Foundation (UOGEF), the Guam Educational Radio Foundation (GERF)/KPRG and the AmeriCorps. Attempts were also made to calculate these direct jobs (along with other jobs in this report) on its Full-Time Equivalence (FTE) basis, with full-time defined to be 40 work hours per week. As TABLE 2 below shows, UOG created 849 FTE jobs, which corresponds to 849 direct jobs.

TABLE 2
FTE JOBS CREATED BY UOG AND RELATED UNITS: FY2019

	FTE JOBS	AMOUNTS EXCLUDING BENEFITS	EXPLANATIONS
UOG	**722.3**	**$34,380,798.70***	
Faculty not including adjunct faculty	190.2	$32,161,062.61	*identified faculty using FY2019 Staffing Pattern, determined if 12- month or 9-month appointment, for 12 months FTE=2,080 hours per year; if 9 months FTE=1,360 hours per year*
Non-Faculty	436.6		*all non-faculty were calculated with FTE=2,080 hours per year*
Adjunct Faculty	75.6	$1,814,061.25	*payroll hours were not given so payroll amount was divided by $3,000 assumed adjunct salary per course; FTE=4 courses per semester or 8 per fiscal year*
UOG-related units	**126.3**	**$3,501,413.07**	
CWS	19.9	$405,674.80	*total payroll hours were divided number of pay period; FTE=80 hours per pay period*
RCUOG	108.8	$2,982,888.43	*total payroll hours were divided number of pay period; FTE=80 hours per pay period*
UOGEF	4.0	$136,626.38	
GERF/KPRG	2.7	$107,211.89	
AMERICORPS (Full Time Employees)	3.0	$66,521.37	
AMERICORPS	7.7	$208,165.00	*payroll hours were not given, so hourly rate used was $13.175 and payroll amount per pay period was divided by hourly rate to get hours works per pay period; FTE=80 hours per pay period*
TOTAL FTE JOBS CREATED BY UOG AND RELATED UNITS	**848.5**	**$37,882,211.70**	

Data source: *Payroll data for UOG and related units (UOGEF, RCUOG, GERF/KPRG and Americorps)*
Note: Data was provided by Frances Villaverde, Senior Programmer Analyst, Office of Information Technology, on February 19 and 20, 2020.

It is important to note that payments by UOG as employer and its employees toward retirement, health insurance and other benefits, estimated at $10 million in FY2019, are included in this report although estimates are presented in APPENDIX B if benefits were excluded in the calculation of UOG's economic impact on Guam.

Taxes paid by UOG direct employees to GovGuam comprised of two types:

- Medicare, which was calculated as 1.45% share paid by employer (UOG) and 1.45% share paid by employee = 2.9% x $39.9 million = $1.157 million; and
- Income taxes, which was calculated by assuming an average income tax rate of 15% on total income, hence, 15% x $39.9 million = $5.985 million

TABLE 3
SUMMARY OF DIRECT JOBS, INCOMES AND TAXES CREATED BY UOG

	Direct Impact
Jobs (FTE)	**849**
Incomes	**$ 39,914,518***
Taxes	**$ 7,144,699**
Income Taxes (assumed 15%)	*$ 5,987,178*
Medicare Taxes (2.9%)	*$ 1,157,521*

***** This amount differs from the figure reported in TABLE 2 which was based on Payroll Records but is consistent with data from the *UOG Expenditures by Function FY2018 and FY2019*.

Calculation of UOG Indirect Jobs and Incomes

The *UOG Payments by Vendor List FY2019* was used to calculate indirect jobs created by UOG. This data source was reviewed with the primary goal of tracking the amounts that UOG paid its Guam-based/on-island suppliers/vendors. This required going through the list of 4,222 vendors, defined as individuals or organizations to whom UOG issued payments (usually in checks), which showed a total amount of almost $59 million in FY2019.

First, off-island suppliers/vendors were removed from the list, with corresponding payments of
$5.5 million. Second, a review of the *Annual Credit Card Statements* showed that approximately 97% of credit card charges estimated at $4.4 million were for purchases from off-island suppliers/vendors. Third, the total amount spent on Travel in FY2019 was obtained from *UOG Expenditures by Function FY2018 and FY2019*. This amount was $2.5 million, 100% of which was assumed to have been spent during travel and therefore paid off-island. In the future, a system that separates suppliers/vendors into on-island and off-island or codes them as such would be useful in performing this type of analysis. This sorting could also be done if information about vendor addresses or locations are entered into the existing UOG data base for payments.

For the purpose of this report, which is to calculate UOG's economic impact, the amounts shown in **TABLE 4** were used.

TABLE 4
CALCULATION OF UOG'S PAYMENTS TO ON-ISLAND SUPPLIERS/VENDORS

UOG Expenditures FY2019 [1], *	$86,197,243
Less Salaries [1]	-$39,914,518
Equals Payment to Vendors (including scholarships and benefits)	$46,282,725
Less Check Payments to Off-Island Vendors [2]	-$ 5,559,535
Less Credit Card Payments to Off-Island Vendors [3]	-$ 4,376,430
Less Travel Expenditures (assumed all Off-Island Spending)	-$ 2,513,937
Equals Payment to On-island Suppliers/Vendors [1] (including scholarships and benefits)	$33,832,823

Data Sources:

1 *UOG Expenditures by Function FY2018 and FY2019*

2 Author's own calculation based on amounts from *UOG Payments by Vendor List FY2019*

3 Author's estimate based on review of the *Annual Credit Card Statements* which show approximately 97% of credit card charges (assumed $4,511,783, which UOG paid to Guam-based banks) were for purchase from off-island vendors.

Note: * In *the UOG Expenditures By Function Report FY2018 and FY2019*, "Depreciation", "Note/Bond Payment- Interest", "465 Net Investment Income" and "Tuition Discount" are added for a total amount of $102,276,883 (See APPENDIX C)

TABLE 4 shows that approximately $12.45 million of UOG's $86 million total expenditures in FY2019 or 14.44% went to off-island suppliers/vendors, meaning 85.56% went to Guam-based suppliers/vendors. This is important for performing impact on the local economy as amounts paid to off-island suppliers/vendors do not stay and multiply in the local economy and hence do not create local jobs, incomes and generate tax revenues to the local government.

At this point, work continued on *UOG Payments by Vendor List FY2019* on suppliers/vendors who were now considered as Guam-based/on-island and payments to them estimated at $33.8 million in FY2019 as shown in **TABLE 4.** These payments in turn became sales revenues to these suppliers/vendors, which allowed them to pay their employees' incomes, who then pay taxes to GovGuam. Supplier/vendors' sales revenues were also subject to GRT, another tax revenue source for GovGuam.

Because the economic impacts of UOG payments to on-island suppliers/vendors depend on the industries in which they operated, it was necessary to identify them by industry and classify them and the payments they received from UOG into the following 2-digit NAICS according to the newly-released data for Guam from the *2017 Economic Census for the Island Areas.* The result is shown in **TABLE 5**.

TABLE 5
UOG PAYMENTS TO ON-ISLAND SUPPLIERS/VENDORS BY INDUSTRY

NAICS		UOG Expenditures Going to On-island Suppliers/Vendors FY2019	% Total
00	Total for all sectors*	$15,195,904*	44.91%
22	Utilities	$3,486,571	10.31%
23	Construction	$1,719,553	5.08%
31-33	Manufacturing	$313,656	0.93%
42	Wholesale trade	$290,577	0.86%
44-45	Retail trade	$1,540,199	4.55%
48-49	Transportation and warehousing	$89,402	0.26%
51	Information	$826,204	2.44%
52	Finance and insurance**	$3,583,786**	10.59%
53	Real estate and rental and leasing	$39,621	0.12%
54	Professional, scientific, and technical services	$631,131	1.87%
56	Administrative and support and waste management and remediation services	$1,085,941	3.21%
61	Educational services	$3,350	0.01%
62	Health care and social assistance	$39,487	0.12%
71	Arts, entertainment, and recreation	$6,713	0.02%
72	Accommodation and food services	$740,085	2.19%
81	Other services (except public administration)	$3,409,214	10.08%
92	Public Administration	$831,428	2.46%
		$33,832,822	

Data Sources:
Author's own calculation based on amounts from *UOG Payments by Vendor List FY2019*

Notes:
* This amount included payment to suppliers/vendors that could not be clearly identified with other industry, for example, payments to individuals where an individual's name was listed but the purpose of payment was not identified in the *UOG Payments by Vendor List FY2019*, although it would be identified in the *UOG Payment List FY2019*, which contained more than 61,000 payments or "vouchers".
Some payments to individuals represented direct payment for reimbursement for a wide range of purposes as well as payments of students for scholarships.

** This amount was estimated from $3,448,432 UOG payments to insurance companies and $4,511,783 to Guam- based banks. However, payments to banks represented primarily payments toward purchases on credit cardsissued by these banks and an estimated 3% of credit card purchases going to on-island suppliers/vendors.

TABLE 6
EMPLOYEES BY UOG'S ON-ISLAND SUPPLIERS/VENDORS
(*aka* INDIRECT JOBS CREATED BY UOG), BY INDUSTRY

NAICS		Indirect Jobs (FTE) Created by UOG	Annual Incomes*
00	Total for all sectors	74	$3,005,863
22	Utilities	5	$372,175
23	Construction	11	$357,410
31-33	Manufacturing	3	$86,498
42	Wholesale trade	1	$23,600
44-45	Retail trade	6	$155,961
48-49	Transportation and warehousing	1	$26,774
51	Information	4	$198,006
52	Finance and insurance	12	$567,235
53	Real estate and rental and leasing	0***	$7,678
54	Professional, scientific, and technical services	4	$233,474
56	Administrative and support and waste management and remediation services	14	$339,692
61	Educational services	0***	$1,410
62	Health care and social assistance	0***	$15,596
71	Arts, entertainment, and recreation	0***	$2,007
72	Accommodation and food services	9	$198,406
81	Other services (except public administration)	37	$985,542
92	Public Administration**	4	$235,868
		206 **TOTAL INDIRECT JOBS (FTE)**	**$6,813,195** **TOTAL INCOMES EARNED**

Data Sources:
Author's own calculation based on Guam data from the *2017 Economic Census of Island Areas*.
Notes:
* The data source above provided annual incomes per employee per industry was for 2017, which was then adjusted for 2019 using the growth rate derived by comparing the average hourly rate for March 2017 and March 2019 (latest data available) for each industry.
** NAICS 92 (Public Administration) was not included in the *2017 Economic Census of Island Areas* and was calculated by the author using the amount of "Government consumption expenditures and gross investment" for the year 2017 from the *2018 Guam Gross Domestic Product* (bea.gov), the number of employees for both Federal Government and GovGuam for 2017, average weekly hours worked and average hourly rate for GovGuam (data not available for Federal Government) using data from the *Current Employment Statistics* by the Guam Department of Labor-Bureau of Labor Statistics.
*** These figures were small and rounded off to "0".

TABLE 6 shows that, of the $33.833 million that UOG paid on-island suppliers/vendors, $6.813 million went to incomes of employees by these supplier/vendors and whose jobs corresponded to the indirect jobs created by UOG, $10.2 million were paid by these suppliers/vendors to their off-island suppliers/vendors while the remaining $16.815 million was assumed to be incomes of UOG's on-island suppliers/vendors.

Taxes paid to GovGuam by employees of UOG's on-island suppliers/vendors aka UOG indirect employees as well as assumed Incomes of UOG's on-island suppliers/vendors comprised of three types:

- Gross Receipts Taxes, which was calculated as 5% of UOG's total payment to on-island suppliers/vendors, which represented part of the latter's sales revenue ($33.8 million) = $1.69 million;
- Medicare Taxes, which was calculated as 2.9% x ($6.813 million + $16.815 million) = $0.697 million;
- Income taxes, which was calculated by assuming an average income tax rate of 15% on total income, hence, 15% x ($6.813 million + $16.815 million) = $3.607 million

TABLE 7
SUMMARY OF INDIRECT JOBS, INCOMES AND TAXES CREATED BY UOG

	Indirect Impact
Jobs (FTE)	**206***
Incomes	**$24,046,414****
Taxes	**$5,995,949**
Income Taxes (assumed 15%)	$3,606,962
Medicare Taxes (2.9%)	$697,346
Gross Receipts Taxes (5%)	$1,691,641

Notes:
Author's own calculation.
***This number was obtained from TABLE 6.
**** Incomes of employees of UOG's on-island suppliers/vendors aka Indirect jobholders = $6,813,195 Incomes assumed to be earned by UOG's on-island suppliers/vendors = $16,815,776

CALCULATION OF UOG INDUCED JOBS AND INCOMES

This section tracks the economic impact of four sources of induced spending, which further create jobs, incomes and taxes on Guam. These are

- Spending by UOG's direct jobholders, i.e., UOG employees
- Spending by UOG's indirect jobholders, i.e, employees by UOG's on-island suppliers/vendors (including spending by UOG scholarship recipients)
- Spending of incomes by UOG's on-island suppliers/vendors
- Spending by UOG alumni

These induced spending resulted from the incomes generated by these four groups:

- $39.9 million of incomes by UOG's direct jobholders, i.e., UOG employees
- $6.813 million of incomes by UOG's indirect jobholders, i.e, employees by UOG's on- island suppliers/vendors (including spending by UOG scholarship recipients)
- $16.815 million of incomes by UOG's on-island suppliers/vendors
- Additional incomes earned by UOG Alumni as a result of earning a UOG degree, which was calculated based on the following:
    - 18,467 UOG alumni (from *UOG 2018-2019 Factbook*) + 253 graduates during Fall 2019 = 18,720 total alumni as of December 2019
    - Assume 20% have either passed on or retired/no longer working = 3,744 alumni out of 18,720 total alumni
    - Data on UOG graduates from AY2003-2004 to AY2018-2019 (from various years of the *UOG Factbook*) plus graduates during Fall 2019 show, on average, 80% of those who graduated earned undergraduate degrees and 20% master's degrees
    - Data from the 2020 UOG Alumni Survey show
        - 16% of UOG alumni live off-island = 2,995 alumni out of 18,720 total alumni
        - Annual salary increase of approximately $15,000 between the time that alumni was pursuing his/her undergraduate study at UOG and after completing the master's degree (= Value of a UOG undergraduate degree)
        - Annual salary increase of approximately $5,000 between the time that alumni was pursuing his/her master's program at UOG and after completing the master's degree (= Value of a UOG master's degree)

Based on these data and assumption, UOG Alumni additional income = (9,585 who completed their undergraduate degree at UOG x $15,000 annual salary increase) + (2,396 who completed their master's degree at UOG x $5,000 annual salary increase) =
$155.755 million

For calculation of overall incomes (increase in Guam's economy measured by the nominal Gross Domestic Product (GDP), a local spending multiplier of 1.30 was used (Ruane, 2011b). The results are presented in **TABLE 8**.

TABLE 8
SUMMARY OF INDUCED JOBS, INCOMES AND TAXES CREATED BY UOG

	Induced from incomes of direct jobholders	Induced from incomes of indirect jobholders	Induced from incomes of UOG's on-island suppliers/vendors	Induced from higher Income of Alumni	Total Induced Impact
Jobs (FTE)	**570**	**103**	**240**	**2,223**	**3,136**
Overall Incomes	**$51,888,873**	**$9,399,830**	**$21,860,508**	**$202,481,500**	**$285,630,711**
Taxes	**$11,882,552**	**$2,152,561**	**$5,006,056**	**$46,368,264**	**$65,409,433**
Income Taxes	$7,783,331	$1,409,974	$3,279,076	$30,372,225	$42,844,607
Medicare Taxes	$1,504,777	$272,595	$633,955	$5,871,964	$8,283,291
Gross Receipts Taxes	$2,594,444	$469,991	$1,093,025	$10,124,075	$14,281,536

Note: Author's own calculation.

IMPROVEMENTS OVER AN EARLIER CALCULATION (FEBRUARY 11, 2020 AND MARCH 8, 2020 DRAFT REPORTS)

- All job figures had been recalculated as FTE.
- UOG's payments to banks that were actually payment toward the credit cards issued by these banks had been estimated to see how much of the credit card purchases were from on-island suppliers/vendors.
- An alternative calculation that removed the amount that UOG spent on Benefits (approximately $10 million) from the total payment to on-island suppliers/vendors was performed and the results can be found in APPENDIX B.
- A sensitivity analysis was performed assuming a lower average income tax rate, in this case, 10%. Results can be found in APPENDIX D.
- The number of UOG Alumni was updated up through December 2019
- Calculation of UOG Alumni additional incomes was updated based on actual data from the 2020 Alumni Survey

--- END OF REPORT ---

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APPENDIX A
JUSTIFICATION FOR NOT USING RIMS II, IMPLAN OR INPUT-OUTPUT METHODOLOGY ON GUAM DATA

Based on my 28 years of work in the field of Development Economics, including 12 years of expertise on the Guam economy, during which I developed a high level of familiarity with the availability of economic data and studies on Guam and a solid reputation as one of the few (5-8) economists in Guam (including being the economist to make presentation to the Standard and Poors staff who visiting Guam for the first time in February 2013 in order to revise its credit rating of Guam bonds), and based on my review of the data required to generate various multipliers using either the RIMS II or the IMPLAN methodology, I can authoritatively state that **there is insufficient available data on the Guam economy to estimate various multipliers using either the RIMS II or the IMPLAN methodology, or any other methodology that makes use of an input-output model; that**

- this insufficiency in available data is the primary reason why no studies that estimate various multipliers for the Guam economy using RIMS II, IMPLAN or input-output methodology currently exists;
- existing economic impact studies that relate to Guam had relied on using various multipliers that were estimated using the RIMS II or the IMPLAN methodology for other jurisdiction (e.g., Hawaii's or the common practice of finding a jurisdiction with a population similar to Guam's, i.e., 160,000), and that this approach has been criticized by Guam-based economists as being an inappropriate approach and as leading to inaccurate/misleading results (e.g., see Ruane (2011a) on the U.S. Department of the Navy's Draft Environmental Impact Statement on the military build-up on Guam);
- if the above approach of simply "borrowing" RIMSII or the IMPLAN estimates from other jurisdictions were used, these estimates would actually show an inaccurately and misleadingly higher economic and employment benefits for every $1 spent on projects in Guam, which would increase the economic impact of any proposed project or activity in Guam; but, as an economist with expertise on Guam and with the knowledge that the above estimates would be inaccurate and misleading, I would insist on using what is believed by local economists as more accurate estimates for the Guam economy; and that
- in light of the fact that these more accurate estimates of economic impact are lower than those borrowed from other jurisdictions, the estimates of direct, indirect and induced jobs presented in this report can be viewed as conservative estimates and representing more of the minimum estimates.

Given the impossibility of estimating multipliers (employment and spending, in particular) using currently available Guam data and the inaccuracy of using another jurisdiction's RIMS II or IMPLAN-estimated multipliers, calculations in this report were based on an **alternative methodology** developed by Ruane (2012, 2018) for estimating an employment and spending multipliers that more accurately reflect the Guam economy and, hence, are more appropriate to use in economic analysis that apply to the Guam economy.

APPENDIX B
EFFECT ON UOG'S ECONOMIC IMPACT ON GUAM
IF BENEFITS EXPENDITURES WERE EXCLUDED

Whether or not to include benefits spent by UOG in FY2019, estimated at $10 million, is a valid question because the impact of these payments on Guam's economy depends on the net effect, i.e., the amount paid/contributed by UOG and employees less the amount of benefits received by UOG employees. For example, for health insurance, the net effect would be calculated as the difference between the premium amounts paid by UOG and employees and the amount of health care service received or utilized by UOG employees during the same period. The calculation of net benefits becomes more difficult when it involves different timeframes and different employees such as retirement, in which case the net benefits each fiscal year is the difference between the retirement contribution by UOG and employees that time period and the amounts of retirement benefits received by now retired UOG employees. This is further complicated by the fact that retirement is for all GovGuam employees, not just for UOG employees.

Below illustrates what the economic impact would be if $10 million of benefits were excluded.

	Direct Impact	**Indirect Impact**	**Induced Impact**	**TOTAL ECONOMIC IMPACT *Excluding* benefits**	**TOTAL ECONOMIC IMPACT *Including* benefits**
Jobs (FTE)	**849**	**163**	**3,035**	**4,047**	**4,191**
Overall Incomes	**$39,914,518**	**$16,956,549**	**$276,413,886**	**$333,284,953**	**$349,591,643**
Taxes	**$7,144,699**	**$4,226,863**	**$63,298,780**	**$74,670,342**	**$78,550,081**
Income Taxes	$5,987,178	$2,543,482	$41,462,083	$49,992,743	$52,438,746
Medicare Taxes	$1,157,521	$491,740	$8,016,003	$9,665,264	$10,138,158
Gross Receipts Taxes		$1,191,641	$13,820,694	$15,012,335	$15,973,177

Note: Author's own calculation.

IMPACT

If $10 million of benefits were excluded from UOG's expenditure in FY2019, UOG would have created 144 less jobs, generated $16.3 million less overall incomes and $3.88 million less tax revenues.

APPENDIX C
SUMMARY OF UOG'S EXPENDITURES, FY2019

TYPE OF EXPENDITURE	AMOUNT
Salaries	$ 39,914,518
Benefits	$ 9,995,116
Travel	$ 2,513,937
Contracts	$ 9,962,511
Supplies	$ 2,430,695
Equipment	$ 1,305,369
Capital outlay	$ 1,357,755
Utilities	$ 4,260,176
Miscellaneous (including Scholarships)	$ 14,457,166
TOTAL UOG EXPENDITURES	**$ 86,197,243**
Depreciation	$ 4,077,149
Note/Bond Payment-Interest	$ 485,888
465 Net Investment Income	$ 366,648
Tuition Discount	$ 11,149,955
Health Care	
GRAND TOTAL	**$ 102,276,883**

Data Source: *UOG Expenditures by Function FY2018 and FY2019*

Note: Data was provided by Rachel Field Cubacub, UOG Associate Budget and Administrative Process Officer, on January 15, 2020. Thanks also to Frances Danieli, UOG Associate Comptroller and Bursar, for clarifying some definitions on January 15, 2020.

APPENDIX D
EFFECT ON UOG'S ECONOMIC IMPACT ON GUAM IF THE AVERAGE INCOME TAX RATE WERE REDUCED TO 10%

	Direct Impact	Indirect Impact	Induced Impact	TOTAL ECONOMIC IMPACT
Jobs (FTE)	849	206	3,136	4,191
Overall Incomes	$39,914,518	$24,046,414	$285,630,711	349,591,643
Taxes	$5,148,973	$4,793,628	$51,127,898	**$61,070,499**
Income Taxes (10%)	**$3,991,452**	**$2,404,641**	**$28,563,071**	**$34,959,164**
Medicare Taxes	$1,157,521	$697,346	$8,283,291	10,138,158
Gross Receipts Taxes		$1,691,641	$14,281,536	$15,973,177

Note: Author's own calculation.

IMPACT

If the average tax rate were 10% instead of 15%, income tax revenues and hence total tax revenues would decrease by approximately $17.5 million from $78.55 million to $61.07 million.