



# 2018 Impact Report

## Cooperative Extension & Outreach



UNIVERSITY OF GUAM  
COOPERATIVE EXTENSION & OUTREACH



**Lee S. Yudin, PhD**  
**Dean/Director**  
**UOG CNAS**

Buenas yan Hafa Adai,

It is a pleasure to be able to provide a short message of my appreciation to all the hard work that went into the production of the 2018 Impact Report: Cooperative Extension and Outreach (CE&O). This work is under the leadership of my Associate Director, Dr. Sereana H. Dresbach and her amazing group of faculty and staff that make up Guam CE&O.

The 2018 Impact Report demonstrates how vital a role CE&O is in our community. Through our 4H Youth Development programs (STEM after school programs, gene'ius or science Saturday's and our island wide 4H clubs ); Community Development programs (issues that involve the Compact of Free Association nations); Consumer and Family Sciences programs (community health & nutrition, food safety and security, wellness and healthy aging); and our Agriculture and Natural Resources programs (production agriculture, iron wood preservation, combating invasive species).

We don't want to be the best kept secret on Guam we want everyone citizen that lives on this island to know that CE&O is here to serve almost any specific needs they may have with the programs listed above and we are open to other programs they might see us engaging ourselves in.

The University of Guam is one of the nationwide networks of the US Land Grant system and our role is improving the lives of the people we serve. We are always looking for volunteers so if you think you want to become a volunteer please let us know and become part of our wonderful family.





**Sereana Howard Dresbach, PhD,  
Associate Dean/Director  
Cooperative Extension & Outreach**

Hafa Adai!

Most Extension professionals across the country have a copy of the *Extension Professionals Creed* on their wall or computer desktop. The *Creed* is a foundation piece that outlines beliefs of Extension professionals throughout the system. The *Creed* identifies several important concepts that form the basis of Extension activities, programs, materials, and connections. One line summarizes Extension education..... it says that as an Extension professional "...I believe that Extension is the link between the people and the ever-changing discoveries...." Through informal and non-formal education processes, Cooperative Extension & Outreach delivers the ever-changing discoveries to the people for use in their daily living.

Connecting people with research-based information is engagement. Cooperative Extension & Outreach recognizes the responsibility of being engaged with all citizens of Guam. Through activities, programs, and materials, Cooperative Extension & Outreach is the "front door" to University of Guam. Creating meaningful, research-based activities will assist people to engage with thoughtful professionals across the university.

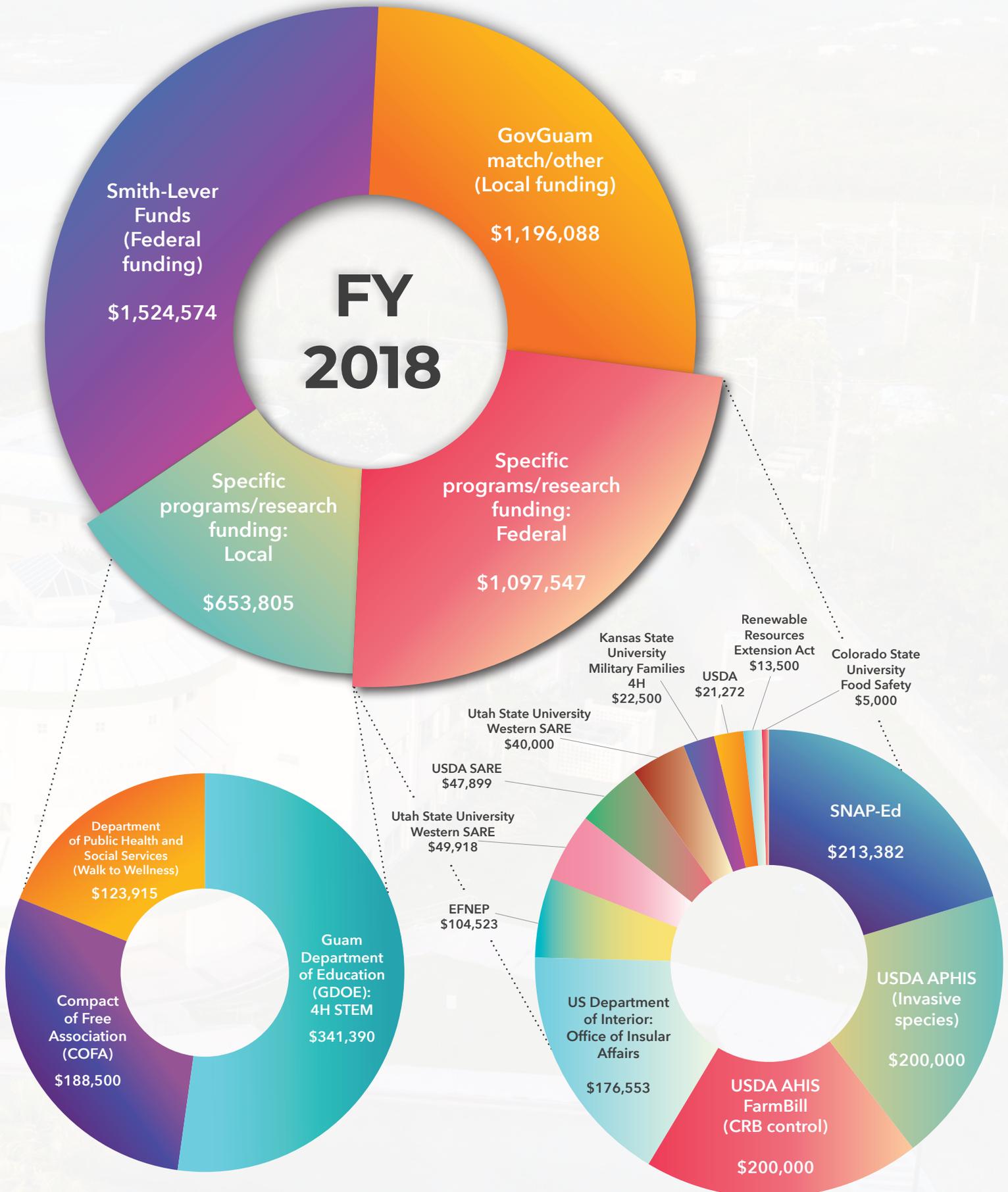
The *Creed* further states the belief that Extension education stimulates lifelong learning. Cooperative Extension & Outreach embraces lifelong learning in the design and delivery of education opportunities. Through face to face opportunities, digital connections, workshop, group events, or printed materials, Extension brings information into homes for individuals and families to make healthy decisions. Community businesses, agencies, and organizations are provided unbiased information for strategic actions. Youth learn, explore, and discover scientific processes to address challenges in today and tomorrow's society.

These beliefs are the foundation for UOG Cooperative Extension & Outreach work – engagement for all, lifelong learning, belief in people and their hopes.



# COOPERATIVE EXTENSION & OUTREACH FUNDING SOURCES

**FY  
2018**







# 4-H YOUTH DEVELOPMENT

Guam 4H Youth Development embraces the commitment of the National 4H Council by “...*providing leadership and resources so that 4-H programs are available to youth across the US.*”

Guam 4H Youth Development programs focus on responsibility and empowerment of all youth through leadership development. To truly empower youth to become responsible citizens, Guam 4H Youth Development focuses on the inclusion of all youth, not separating by differences.

How are youth engaged? Guam 4H goes to the youth. In schools, Guam 4H Youth Development facilitated STEM programs in the classrooms, complimenting established curriculums, to enhance the formal learning environment.

Through traditional program outlets, Guam 4H Youth Development focuses on inclusion of youth into clubs and activities that teach research-based subject matter through experiential activities, with parents as trained volunteers. While the activities are focused on a particular learning outcome, there are implicit lessons about leadership, citizenship, responsibility, and ethics woven into all activities.





# ENGAGING ALL YOUTH

National 4H Council utilizes resources from 4H programs across the US. Guam 4H Youth Development photos were utilized in the national 4H social marketing effort.



In 2018, Guam 4H Youth Development had 9,603 youth participants and indirectly connected to 11,524 additional youth.

Over 360 adult volunteers participated as mentors through clubs, schools, special events, and training activities.

Four new community clubs were chartered and twelve 4H enrichment programs were established.

Guam 4H Youth Development conducted ten special interest programs and day camps throughout the course of the year.

In addition, six technology workshops were conducted as well as three workshops focused on family learning and mentoring.





# JUST ADD WATER

9,603

TOTAL YOUTH PARTICIPANTS

11,524

ADDITIONAL INDIRECT CONTACTS WITH YOUTH

16

NEW CLUBS & PROGRAMS ESTABLISHED

*Guam GENE-ius* is another opportunity for youth to experiment, explore, and engage in science play as a building block for scientific inquiry. Since the inception, a total of 151 students have graduated the hands-on STEM program. Within the *Guam GENE-ius*' iterations, 62% of participants identified positive change in learned information. Across disciplines, age-centered activities focused on discovery about anatomy, biotechnology, climate change, electricity, food webs, genetics, physics, and water, to name a few subjects.

Science Saturdays expanded to two additional grade tiers: a four part series for grades 1 through 3 and a three part, extended daily schedule for grades 7 through 9. Over one-third of the participants (39%) in grades 1-3 indicated new knowledge from the series. For grades 7-9, 24% of the participants indicated new knowledge gained from the series. Utilizing established curriculum from land grant partners in 4H youth development and other colleges, *Guam GENE-ius* has established a cycle of STEM subject matter that is different for each year of participation.





# SCIENCE SATURDAY

151

TOTAL  
PARTICIPANTS

62%

REPORTED INCREASE  
IN KNOWLEDGE





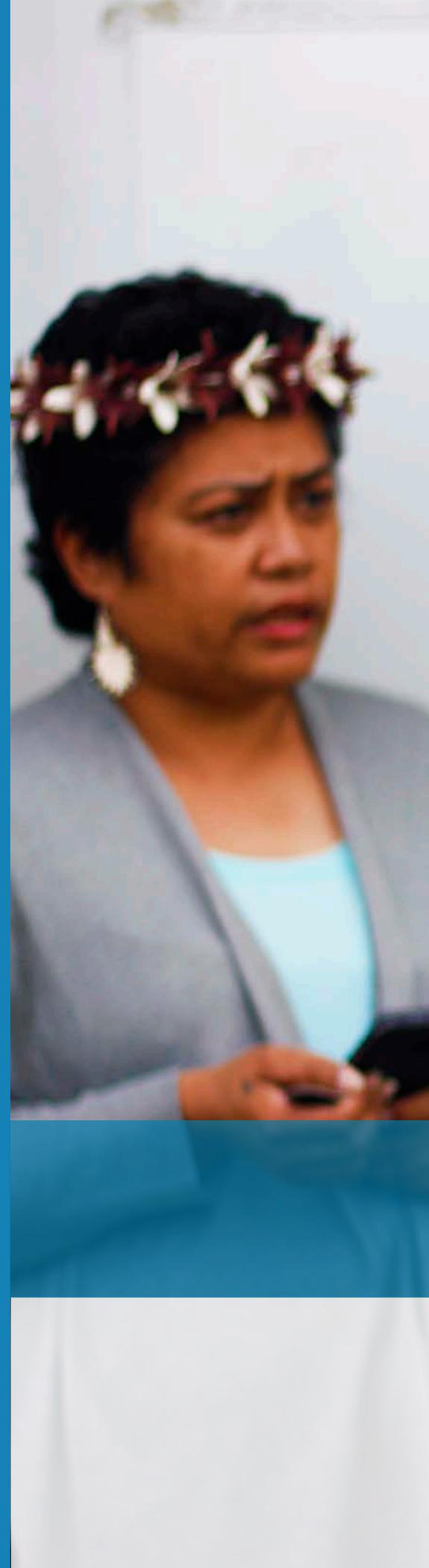
# COMMUNITY DEVELOPMENT

CHALLENGE

The Compact of Free Association (COFA) Amendments Act of 2003 allows citizens of the Federated States of Micronesia, Republic of the Marshall Islands, and Republic of Palau to enter, work, and live in the U.S. and its territories. In 2018, 93 percent of all COFA migrants resided in Guam (18,874) and Hawaii (16,680).

One provision designated that the US Census Bureau conduct a COFA Impact survey every five years. The 2018 Compact of Free Association (COFA) Survey represents an ongoing survey collaboration between government agencies to create an accurate picture of in-migration, community infrastructure, and emerging needs. For government agencies and community organizations, special surveys are important to capture timely information that impacts communities.

Data from the survey will be used to allocate \$30 million Compact Impact funds for a range of socio-economic programs to offset the impact of migration to Guam and other Pacific Islands. COFA Survey reports will be used to identify trends associated with COFA migrants and Guam communities.





# IMPACT OF COMPACT OF FREE ASSOCIATION

**4,945**

TOTAL HOUSEHOLDS  
SURVEYED

**\$30M**

REGARDING COFA IMPACTS TO  
ALLOCATE

**18,874**

IN-MIGRANTS  
TO GUAM

Individual, families, organizations, agencies, and groups want data for decisions. Whether it's the choice of a fresh vegetable in the supermarket or investment in new technology for a business, timely data is important. Through data collection, accurate portrayal of economic sectors, social issues, and environmental systems are critical to decision making processes on Guam.

Motivated by the increasing volumes of data, faster computation, and algorithmic advances, there is an opportunity to apply transformative, data-driven research methods for all sectors of the island – government, business, non-profits, community, as well as families. All sectors of the economy use data to allocate resources, take strategic actions, land use, and make investments.

In 2018, survey implementation began regarding in-migrant residents, agriculture production, and household expenditures. Analysis and interpretation of information gathered will be the focus for Cooperative Extension & Outreach education programs. In addition, preparation for 2020 US Census includes awareness about citizen participation and outcome potential.





# DATA COLLECTION

**3M**

SURVEYS CONDUCTED  
ANNUALLY IN THE US

**900+**

WORKERS TO BE HIRED FOR  
2020 CENSUS ON GUAM

**\$78M**

ASSETS MANAGED BY  
NON-PROFITS & 501C TAX EXEMPT  
ORGANIZATIONS ON GUAM



Ducus  
girl  
apparel

Ducus  
girl

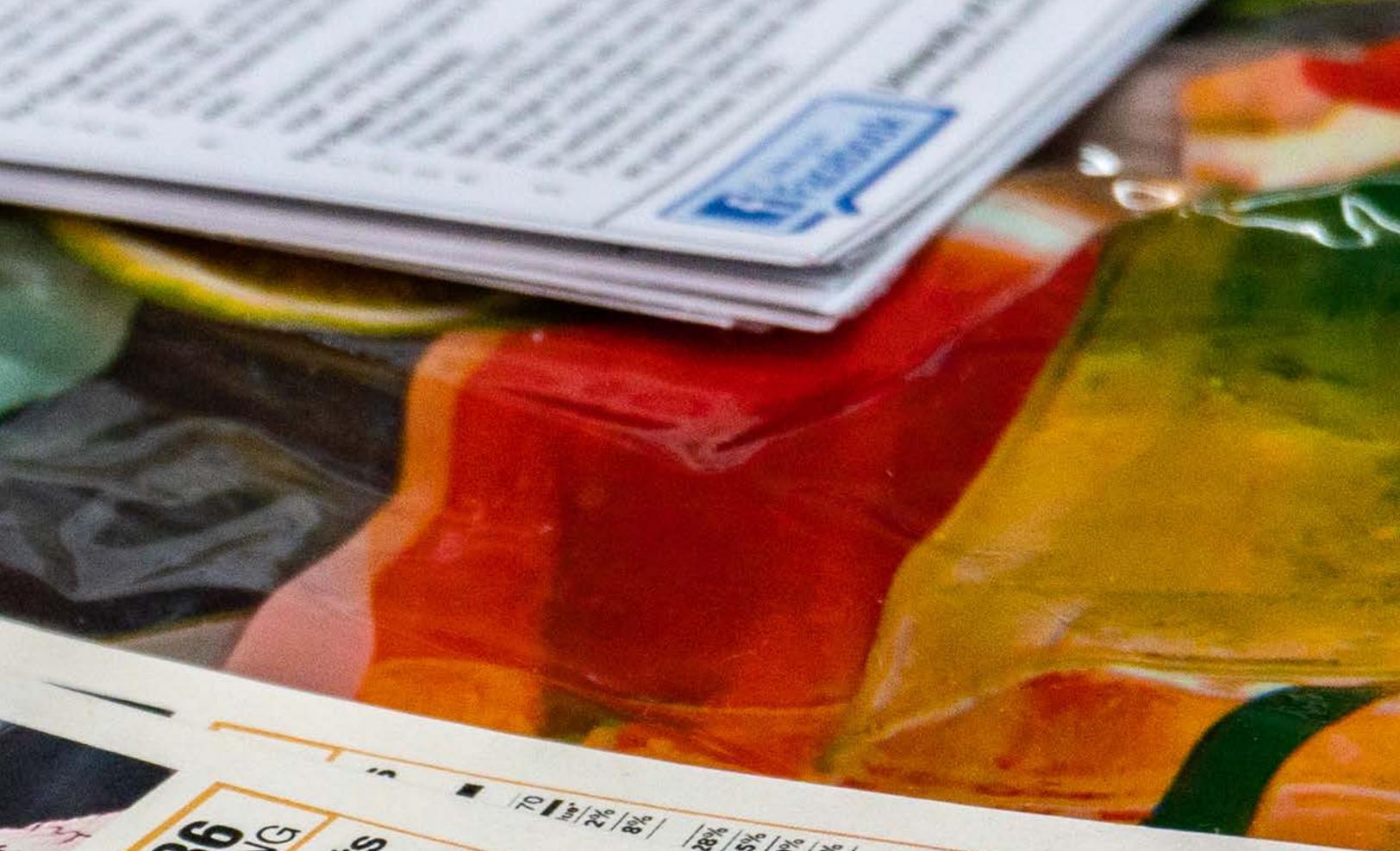


# CONSUMER & FAMILY SCIENCES

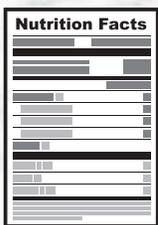
Nutrition facts labels are an important decision-making tool for consumers. Food labels are the bridge between food manufacturers and consumers by communicating product ingredients. For consumers, food labels have different uses, such as the contents of the product, as well as provides guidance about serving size, proportion, calorie count, and nutritional value, such as sugars, salts, trans fat, fiber, protein, and vitamins.

But how are these labels created for local products? Utilizing software based on nutrition research from universities worldwide, UOG Cooperative Extension & Outreach will create a label from analysis of the product contents and serving size. In 2018, based on the information provided by the manufacturer, sixty-five food labels were analyzed and created for food entrepreneurs and community programs.





# NUTRITION FACTS LABELS



65

FOOD LABELS  
CREATED FOR LOCAL  
SMALL BUSINESSES

9

PARTNERED WITH LOCAL  
FOOD BUSINESSES FOR  
LABEL CREATION

15+

POINTS OF INFORMATION  
ON A NUTRITION LABEL

Food safety is everyone's responsibility.

Specific to consumers on Guam, the native breadfruit has been utilized as a staple food in a variety of ways. To extend its availability and versatility, individuals and families attended education programs to learn about safe food preparation and storage of breadfruit. Cooperative Extension & Outreach faculty and professionals shared strategies on safe food handling at harvest and preparation for long term storage. In addition, forty-six participants participated "in the kitchen" with Extension professionals to prepare various recipes to demonstrate breadfruit possibilities.

Engaging the audience through education programs by demonstrating preparation and use, as well as safe storage and handling, are steps toward consumer responsibility to address overall food security.





# FOOD SAFETY & SECURITY

**46** **100+**

TOTAL PARTICIPANTS IN  
BREADFRUIT WORKSHOP

POTENTIAL  
BREADFRUIT PRODUCTS

The Children's Healthy Living project germinated the *Walk to Wellness* program to encourage village level socio-environmental change addressing obesity. With village leaders and local government agencies, one hundred thirty-three individuals and families from five villages participated in the twelve-week program to increase moderate physical activity (walking) and increase the consumption of fruits and vegetables in the daily diet.

As a result, 82% of participants stated they increased physical activity as a result of the program. Participants walked 60,000,192 total steps or over 30,000 miles during the program. On average, individuals increased their walking activity 375 minutes per week.

Participants indicated an increase (73%) in consumption of fruits and vegetables in their individual and family daily diet. This positive change was supported by, 419 seedlings were given to participants to plant at home, including banana, calamansi, papaya, soursop, mango, eggplant, green onion, peppers, spinach, and sweet potato.





# WALK TO WELLNESS

133

TOTAL PARTICIPANTS

82%

REPORTED INCREASED PHYSICAL ACTIVITY

73%

REPORTED INCREASED FRUIT AND VEGETABLE CONSUMPTION





# COMMUNITY NUTRITION EDUCATION PROGRAM

Community Nutrition Education Programs (CNEP) focus on delivering research-based information on nutrition, healthy lifestyle choices, and well-being for all ages. The peer-led education model was introduced in all states and territories in 1969 as an effective means to communicate information to consumers. Peer educators implement evidence-based programs for many audiences – young children, families, school youth, individuals, and senior citizens. The Expanded Food and Nutrition Education Program (EFNEP) and the Supplemental Nutrition Assistance Program Education (SNAP-Ed) reached 2,896 adult participants with direct education and 4,795 individuals through outreach activities in 2018.





# COMMUNITY NUTRITION

2,896

ADULT PARTICIPANTS  
COMPLETED WORKSHOPS

4,795

INDIVIDUALS  
REACHED THROUGH  
OUTREACH ACTIVITIES

575

PEOPLE PARTICIPATED  
IN IN-STORE EVENTS

Through continuous professional development sessions, CNEP faculty and professionals ensured all peer educators were able to connect participants to social programs and services that addressed participant needs. During professional development sessions, guests from partner agencies led dialogue with CNEP peer educators. Guest trainers described eligibility requirements and enrollment process, identified documents needed for application, and, in turn, learned more about Community Nutrition Education Programs. Through awareness and linkage to partner programs, participants increased use of services and assistance, which further supports families and food security.

**PARTNER PROGRAMS:**

- Guam Head Start Program
- DPHSS-SNAP (Department of Public Health and Social Services - Supplemental Nutrition Assistance Program)
- DPHSS-TANF (Temporary Assistance for Needy Families)
- Catholic Social Services
- Special Supplemental Nutrition Program for Women, Infants, and Children
- DSC (Division of Senior Citizens)
- TEFAP (The Emergency Food Assistance Program)
- Dr. Clare Camacho, d.b.a , JOY Consultants





# COMMUNITY ENGAGEMENT

23%

POPULATION ELIGIBLE FOR EFNEP/SNAP-ED PROGRAMS

12,043

CONTACT HOURS WITH GUAM RESIDENTS FOR NUTRITION EDUCATION



The Guam Supplemental Nutrition Assistance Program-Education (SNAP-Ed) partnered with the five villages of Agat, Ordot-Chalan Pago, Santa Rita, Yigo, and Yona to implement the *5-2-1-Almost None* social marketing campaign. The campaign focuses on elementary schools and nearby food stores and community leaders to encourage village residents to make healthy behavior changes.

As the island celebrated *Mes Chamoru* activities in the month of March, students in five elementary schools were given the opportunity to learn about various local fruits and vegetables. *5-2-1-Almost None* healthy messages were seen throughout the school year in newsletters, bulletin boards, parent workshops, and other school events. Schools have adopted life-sized physical activity game boards to allow students more opportunities to get active. Stores have integrated Smart Snacks labeling on store shelves to encourage parents and students to purchase healthy, nutrient-dense snacks.





# 5-2-1 ALMOST NONE

5

FRUITS AND  
VEGETABLES PER  
DAY

2

HOURS OR LESS  
OF SCREEN TIME A  
DAY

1

HOUR OF  
PHYSICAL ACTIVITY  
A DAY

ALMOST  
NONE

SUGAR-SWEETENED  
BEVERAGES

In 2018, the Preventive Health Project (PHP), in coordination with the Department of Public Health and Social Services Division of Senior Citizens, engaged citizens in twelve Senior Centers/Adult Day Cares in the villages of Inarajan, Yona/Talofofu, Macheche, and Dededo. Activities in PHP are to actively improve physical activity minutes and mindset to overcome common challenges.

Active Living Every Day (ALED) is a twelve-week behavior change course to implement PHP. Regardless of fitness level, all individuals are encouraged to make changes that fit their lifestyle to be more active. Participants focus on manageable goals to increase physical activity through behavior change techniques such as:

- Goal setting
- Rewards and celebrating
- Planning Ahead
- Keeping Track of Physical Activity





# HEALTHY AGING

11%

OF GUAM POPULATION  
OVER 55

48

SENIOR CITIZENS  
GRADUATED (ALED)  
IN 2018





# AGRICULTURE & NATURAL RESOURCES

In 2018, Cooperative Extension & Outreach established the annual agriculture survey of production outcomes, revenues, capital investments, and needs for Guam farmers. Through personal interviews and data capture, Cooperative Extension & Outreach is building the economic picture of agriculture production on the island. Creating a systematic collection of information, production agriculture on Guam will provide an accurate representation of agriculture production and market opportunities.

Accurate production information is one avenue for Cooperative Extension & Outreach personnel to identify strategies to meet the needs of agriculture producers and consumers. The survey of farmers will be replicated annually and generates multiple fact sheets, bulletins, and supporting documentation for research activities. This information is the foundation for development of Extension education efforts for all producers.





# PRODUCTION AGRICULTURE ON GUAM

101

FARMERS  
SURVEYED

70

DIFFERENT PRODUCTS  
SURVEYED

340

TOTAL ACRES OF  
LAND USED FOR  
PRODUCTION

Guam's ironwood tree (*Casuarina equisetifolia*) is indigenous to the region and traditionally pest and disease-free. An important component of the agroforest ecosystem, the ironwood tree, or gago, is in the midst of decline due to ironwood tree decline (IWTD) that ultimately threatens Guam's long-term environmental sustainability. Multiple research efforts have focused on the identification of contributing factors, early detection, and intervention, as well as preventative strategies to reduce and reverse the impact ironwood decline on Guam.

Disease-free ironwood seedlings have been generated by the Western Pacific Tropical Research Center and distributed to individuals and groups for planting on private land. In addition, ten off-island cultivars have been identified and propagated to increase the gene pool strength of the ironwood population. Over the next two years, more than seven hundred seedlings will be distributed for new and established agroforestry projects. Concurrently, education programs for individuals, landowners, and farmers will continue to focus on integrated pest management practices for tree care and strategies to reduce ironwood tree decline.





# IRONWOOD PRESERVATION

**49%**

OF TREES IN DECLINE  
SINCE 2008

**700**

SEEDLINGS TO  
BE PLANTED

**10**

CULTIVARS IDENTIFIED  
FOR GENE POOL

The coconut rhinoceros beetle (CRB) is just one example of an identified invasive species. Specific to the CRB-Gv, current research is underway to identify virus control, develop low-tech production methods, and develop a mass distribution strategy for the virus. Communication of research findings into everyday application for individuals, families, and businesses is the Extension education process. In 2018, over two thousand five hundred people participated in various Extension education efforts about effective methods, techniques, and practices to control CRB. One example is education efforts focused on the use of composting at green waste sites to reduce breeding sites for CRB. Other education efforts have highlighted improved trapping strategies.

Research and Extension personnel from the University of Guam have been utilized across the region for their expertise of invasive species. The Western Governors' Association's *Biosecurity and Invasive Species Initiative*, launched in 2018, focused on action strategies and outcomes for agriculture production, tourism, watershed management, and trade. Extension personnel are key members to develop program actions, research, and funding to address economic and environmental impacts on regional, national, and international levels.





# COMBATTING INVASIVE SPECIES

**2,500+**

PARTICIPANTS IN CRB  
EXTENSION PROGRAMS

**500+**

INDIVIDUAL INVASIVE  
SPECIES ON GUAM

**15**

INVASIVE SPECIES  
IDENTIFIED IN 2018

Cooperative Extension and Outreach mission is supported by connecting to people through various forms of media. Media has been categorized into traditional and new media.

Traditional media consists of television, radio, and print media, such as magazines and newspaper. New media tools technologies facilitate personalized communication in the digital environment such as computers, tablets, and mobile devices.

Connecting people to information through all outlets is essential to the mission of Extension education. Cooperative Extension & Outreach new media technologies include website and social media platforms, such as Facebook & Instagram. Extension education recognizes that people want information in different formats, but common to all is connection to research-based, unbiased information. In 2018, Cooperative Extension and Outreach had 900 followers through social media platforms of Facebook and Instagram. Over 2,416 visitors to the website to search for publications, event information or connection to professionals. In other social media presence, CE&O identified more than 350 visitors connected for education events and announcements.





# COMMUNICATING WITH PEOPLE

578

FOLLOWERS ON FACEBOOK

2,416

INDIVIDUAL VISITORS TO EXTENSION WEBSITE IN 2018









# 4H YOUTH DEVELOPMENT



Clifford Kyota  
Extension Associate III  
(671) 735-2044  
ckyota@triton.uog.edu



Glenda Hall  
Extension Associate I  
(671) 735-2041  
ghall@triton.uog.edu



Jasmine Bassett  
Extension Assistant II  
(671) 735-2046  
bassettj7270@triton.uog.edu



Monique Mariur  
Extension Assistant I  
(671) 735-2046  
mariurm@triton.uog.edu



Gabrielle Quenga  
Extension Assistant I  
(671) 735-2046  
gquenga@triton.uog.edu



Jeremiah Lorenzo  
Extension Assistant I  
(671) 735-2046  
lorenzoj@triton.uog.edu



Kimberly Mendiola  
Extension Assistant I  
(671) 735-2046  
kmendiola@triton.uog.edu



Matthew Braganza  
Extension Assistant I  
(671) 735-2046  
braganzam@triton.uog.edu



Harley Jr. Edeluchel  
Extension Assistant I  
(671) 735-2046  
edeluchelh@triton.uog.edu



Alan Seid, Jr.  
Extension Assistant I  
(671) 735-2046  
seida@triton.uog.edu

# AGRICULTURE & NATURAL RESOURCES



Hauhouot Diambra-Odi, PhD  
Associate Professor  
(671) 735-2088  
diambraodih@triton.uog.edu



Roland Quitugua  
Extension Associate III  
(671) 735-2093  
quitugarj@triton.uog.edu



Mark Acosta  
Extension Agent I  
(671) 735-2028  
macosta@triton.uog.edu



Jesse Bamba  
Extension Associate III  
(671) 735-2091  
jbamba@triton.uog.edu



Phoebe Wall  
Extension Assistant I  
(671) 735-2090  
pwall@triton.uog.edu



Robert Schlub, PhD  
Extension Specialist  
(671) 735-2089  
rlschlub@triton.uog.edu



Aubrey Moore, PhD  
Associate Professor  
(671) 735-2086  
aubrey Moore@triton.uog.edu



Andrea Blas, PhD  
Assistant Professor  
(671) 735-2140  
ablas@triton.uog.edu



L. Robert Barber, PhD  
Extension Specialist  
(671) 735-2087  
lbarber@triton.uog.edu



Roger Brown  
Extension Associate II  
(671) 735-2094  
rwbrown@triton.uog.edu



Joseph Afaisen  
Extension Assistant II  
(671) 735-2072  
afaisenj@triton.uog.edu



Joseph Tuquero  
Extension Agent  
(671) 735-2085  
tuqueroj@triton.uog.edu



DonaMila Taitano  
Extension Associate I  
(671) 735-2072  
taitanod5954@triton.uog.edu



Jake Manuel  
Extension Assistant I  
(671) 735-2092  
Manuelj9450@triton.uog.edu



Jaycia Soulmai  
Extension Assistant II  
(671) 735-2028  
soulmaj@triton.uog.edu

## COMMUNITY NUTRITION EDUCATION PROGRAM



Tanisha Aflague, PhD, RDN  
Assistant Professor  
(671) 735-2026  
taflague@triton.uog.edu



Rynette Perez  
Extension Associate II  
(671) 735-2020  
perezrc@triton.uog.edu



Ilesha Ibanez  
Extension Assistant II  
(671) 735-2030  
ibanezi@triton.uog.edu



Nancy Robert  
Extension Assistant II  
(671) 735-2030  
robertn8290@triton.uog.edu



Julie-Ann Emelios  
 Extension Assistant II  
 (671) 735-2030  
 emeliosj@triton.uog.edu



Katrina Camacho  
 Extension Assistant II  
 (671) 735-2030  
 camachok11154@triton.uog.edu



Johannah Naputi  
 Extension Assistant II  
 (671) 735-2030  
 naputij6058@triton.uog.edu



Kevin Dema-Ala  
 Extension Associate I  
 (671) 735-2030  
 dema-alak@triton.uog.edu



Brandon Holm  
 Extension Associate I  
 (671) 735-2020  
 holmb@triton.uog.edu



Cristian Batle  
 Extension Assistant II  
 (671) 735-2030  
 batlec@triton.uog.edu

## CONSUMER & FAMILY SCIENCES



Clarissa Barcinas  
 Extension Associate II  
 (671) 735-2029  
 csnbarcinas@triton.uog.edu



Jian Yang, PhD  
 Extension Specialist  
 (671) 735-2027  
 jyang@triton.uog.edu



Sheryl De Jesus  
 Extension Associate I  
 (671) 735-2030  
 jesusism@triton.uog.edu

## COMMUNITY DEVELOPMENT



Peter Barcinas  
 Extension Agent III  
 (671) 735-2055  
 pbarcina@triton.uog.edu



Gena Rojas, PhD  
 Extension Agent II  
 (671) 735-2054  
 rojasg@triton.uog.edu



Rochelle Bamba  
 Extension Associate II  
 (671) 735-2051/60  
 rbamba@triton.uog.edu

# COMMUNICATIONS & MARKETING



Kathleen Dueñas  
Extension Associate II  
(671) 735-2056  
kduenas@triton.uog.edu



Luke Fernandez  
Extension Assistant II  
(671) 735-2062  
fernandezls@triton.uog.edu



Marissa Villaverde  
Extension Assistant I  
(671) 735-2062  
villaverdem@triton.uog.edu



Angelana Sablan  
Extension Assistant I  
(671) 735-2062  
sablanam@triton.uog.edu

## ADMINISTRATIVE STAFF



Sereana Howard Dresbach, PhD  
Associate Dean/ Director  
(671) 735-2004  
shdresbach@triton.uog.edu



Raeanne Concepcion  
Personnel Specialist  
(671) 735-2003/2352  
rosariorc@triton.uog.edu



Megumi Hikichi  
Extension Associate I  
(671) 735-2021  
hikichim@triton.uog.edu



Jane Mendiola  
Administrative Assistant  
(671) 735-2145  
janemendiola@triton.uog.edu



Ruth Barnes  
Administrative Assistant  
(671) 735-2050/2080  
rbarnes@triton.uog.edu



Kamille Wang  
Extension Associate I  
wangk7348@triton.uog.edu



Peter-Joseph San Nicolas  
Extension Associate I  
sannicolasp567@triton.uog.edu



+1 (671) 735-2062



[HTTPS://WWW.UOG.EDU/EXTENSION/](https://www.uog.edu/extension/)  
[HTTPS://CNAS-RE.UOG.EDU/](https://cnas-re.uog.edu/)



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@UOGCNAS

303 UNIVERSITY DRIVE UOG STATION  
MANGILAO, GUAM 96923



**Cooperative Extension & Outreach delivers research-based, unbiased information to the citizens to use in their daily lives. At the same time, CE&O brings the needs and concerns of the citizens to UOG for research and discovery.**

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