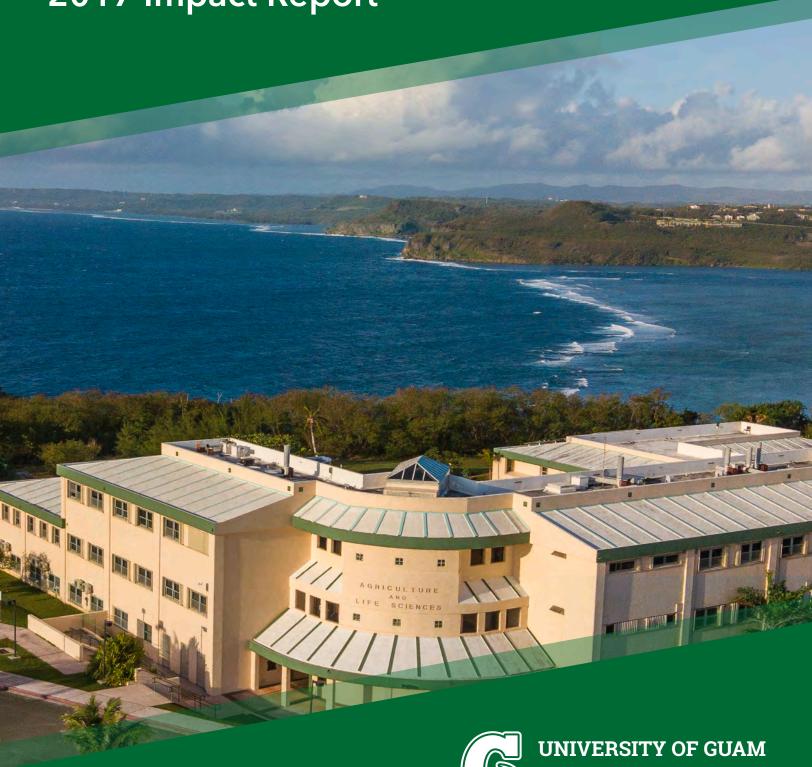
COOPERATIVE EXTENSION & OUTREACH

2017 Impact Report





Buenas yan Hafa Adai,

I was once told at a national extension conference that if your Extension program is not dealing with the issues being highlighted on the first few pages of your local newspaper, your relevance to the community needs to be re-assessed. This year's impact report tells a great story that demonstrates our relevance to the community that we serve. Sometimes, we don't tell our story loud enough so that people truly know who we are and what we do. There is no better organization in this country that reaches nearly all counties and small island communities than Extension and Outreach programs. We work with farmers, people with disadvantages, health care organizations, senior citizens (manamko), and youth via our 4-H programs, to list a few. We are the outreach arm of any land-grant university and we take pride in delivering non-academic programs in the form of workshops and publications. Today, we have moved into social media via Facebook and Instagram to be able to reach all community members we serve. We work closely with our research scientists to make sure their important research is re-written is a way that our stakeholders can find useful.

We don't want to be the best kept secret on Guam. Our mission is our relevance to the people of Guam, and to improve the lives of the community we serve.

Un dangkulu na si yu'us ma'ase,

Lee S. Yudin, PhD
Dean/Director
College of Natural & Applied Sciences



Hafa Adai!

The mission of the University of Guam Cooperative Extension & Outreach (CE&O) is to deliver research-based, unbiased scientific information to the citizens of Guam. In turn, we take the needs and concerns of the people to the university. Cooperative Extension & Outreach faculty and professional staff, across many disciplines, are committed to the Extension mission. We build partnerships across the university, across the island, across the water, and across the world to find answers, solve problems, and identify resources for citizens to make the best decisions for their lives.

Using research-based information in agriculture, we are assisting farmers to feed our island. With science based curricula, we are engaging youth in schools and clubs in STEM education. Our professionals are connecting people of all ages to deliver fact-based nutrition education.

By building capacity for decision-making in families, communities, and businesses, Guam will be able to capitalize on any opportunity and face any challenge. Through educational avenues and open dialogue, Cooperative Extension & Outreach works with our citizens to accomplish what we all want: vibrant villages, strong families, successful citizens, profitable businesses, and engaged youth who are tomorrow's leaders.

Dinanna' para i manmamaila' na tiempo,

Sereana Howard Dresbach, PhD Associate Dean/Director Cooperative Extension & Outreach In 2014, USDA-NIFA and the Land-Grant University System celebrated 100 years of Cooperative Extension in the United States. In the century since its creation, this nationwide educational and outreach network has made significant contributions that improve lives.

The Smith Lever Act formalized Extension in 1914, establishing USDA's partnership with land-grant universities to apply research and provide education in agriculture. Congress created the extension system as rural-focused, because a majority of the population was agriculture and rural based.

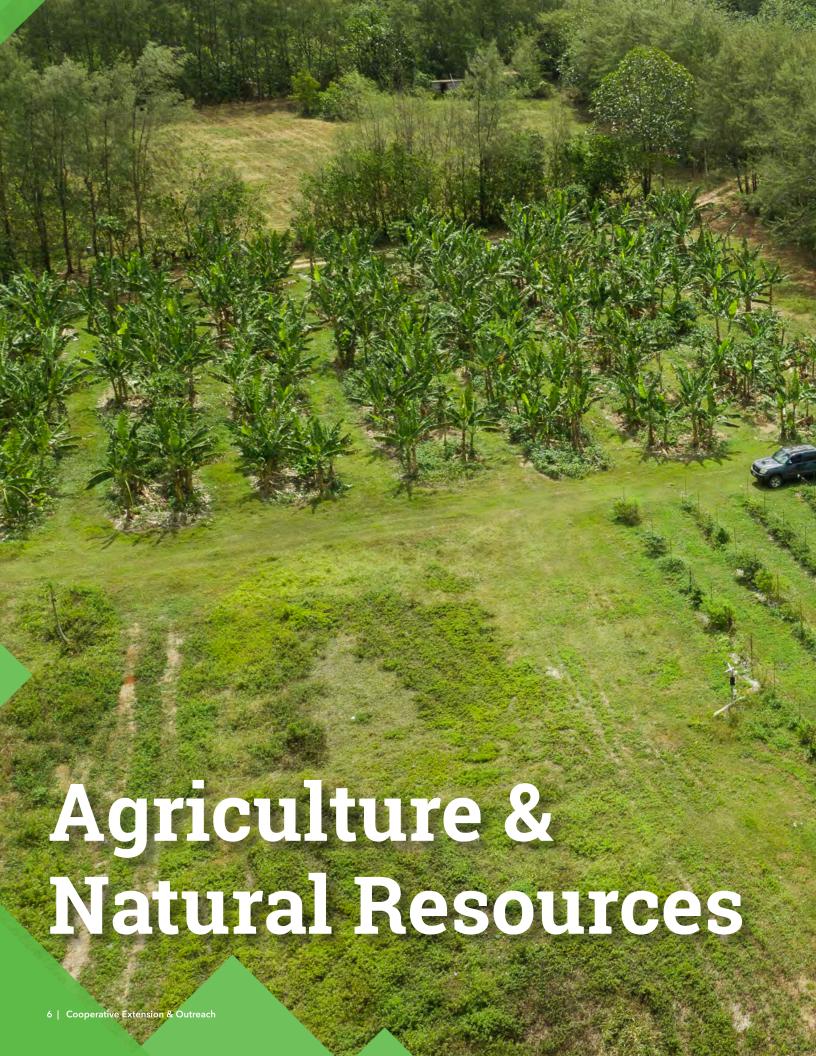
Over the last century, Extension has adapted to changing times and landscapes. The addition of discipline areas to meet the needs of individuals, families, youth, and communities expanded the educational programming to include 4-H Youth Development, Consumer and Family Sciences, Natural Resources, and Community Development.

Today, Cooperative Extension & Outreach is the engagement entity of the University of Guam. Our history mirrors the evolution of the land-grant institutions and Extension education. Starting as a small college, UOG has grown and fully embraces its land grant mission to serve the population for over 50 years. As the land-grant institution system evolves to address more and more issues in meaningful ways, UOG Cooperative Extension & Outreach will continue to engage partners to find ways to meet the needs of the people of Guam.

Source: https://nifa.usda.gov/cooperative-extension-system





















Walk to Wellness

Walk to Wellness focuses on reducing the risk factors of non-communicable diseases by increasing physical activity, fruit and vegetable consumption, and providing meaningful wellness education throughout the island. This program is an outreach activity of the Community Healthy Living research that involves several disciplines, each focusing on their specialty, but collaboratively developed education and outreach programs that impact individuals, families, and communities. The 12-week program of one-hour weekly sessions included group walking and wellness sessions, health screenings, village competitions, and incentives of fruit and vegetable plants and produce. Conducted in Santa Rita and Sinajana to start, over ninety people participated in this program. A long-term goal for this project is intended to expand into villages to encourage and improve village resources to support walking and other physical activity for all residents. Collaborating partners in this effort include University of Guam Cooperative Extension & Outreach, Supplemental Nutrition Assistance Program Education, Department of Public Health and Social Services, Guam Breast and Cervical Cancer Early Detection Program, Guam Comprehensive Cancer Control Program, Tobacco Prevention and Control Program, Diabetes Prevention and Control Program, STD/HIV Program, Medically Indigent Program, and Medicaid Program.

Seven Trees, **Seven Practices**

Seven Trees, Seven Practices focuses outreach activities to demonstrate how to establish commercial and consumer based multi-storied cropping systems, one micro plot at a time. This program promotes conservation practices that create optimal growing conditions despite given constraints, such as limited financial resources, shallow soils, and expensive imported inputs. Practices such as sheet mulching, fruit tree windbreaks, filter strips, drip irrigation, nitrogen fixing hedgerows, contour planting, alley cropping, and multi-storied cropping are all practical strategies for the home owner, as well as the commercial producer.

This multi-storied agroforestry system includes intercropping of short-term cash crops and intermediate high value perennials like bananas and papayas, all planted within a grid of permanent fastto-fruit trees, such as key lime, calamansi, breadfruit, fig, soursop, mulberry, and pomegranate. The pattern is designed to provide rapid-sale cash crops, soon supplemented by high value perennials. Once the initial micro-plot is established and harvesting begins, a second plot is started. Long term implications for this outreach effort focus on island food security by increasing locally grown produce.







Protecting Guam

UOG Extension Entomologist Aubrey Moore, PhD, taught General Entomology during the Fanuchånan 2017 semester. As part of the laboratory section of this course, each student was required to make an insect collection.

On October 23, 2017, Jake Manuel, collected a butterfly from the underside of a soursop leaf. This specimen did not match any of the descriptions in the standard reference for Guam's butterflies. Images were emailed to Donald Buden, PhD, College of Micronesia, Pohnpei, Federated States of Micronesia to request for identification. Buden identified the butterfly as belonging to the genus Doleschallia and forwarded the identification request to John Tennent, PhD, Museum of Natural History in London, England. Dr. Tennent confirmed the species Doleschallia tongana by comparing the images with specimens in the museum. It is considered to be an invasive species because its caterpillars have been reported to feed on breadfruit.

UOG Cooperative Extension & Outreach will be monitoring all areas of the island by utilizing our partner agencies, as well as individuals, to the butterflies' location. Concurrently, Extension will be working diligently to ensure that the butterfly does not spread and threaten the island breadfruit trees.











Food & Nutrition

Expanded Food and Nutrition Education Program (EFNEP) is a federally funded and operates in every U.S. states and territory, including Guam.

The strength of EFNEP is the engagement of paraprofessionals, usually those who live in the communities where they deliver programs, thus strengthening community connections. Through a community-based, relationship-driven, hands-on educational approach, EFNEP has directly impacted economic, obesity, and food insecurity challenges that face the nation as a whole.

EFNEP has two elements - the Adult Program and the Youth Program. Within the Adult Program, individuals and families improve in five core areas over a series of 8 lessons:

- diet quality
- physical activity
- food resource management
- food safety
- food security

Adult lessons are delivered through a learn-by-doing approach that engages them in practical skills to make positive behavioral changes.

In the Youth Program, EFNEP provides nutrition education at schools, after-school care programs, day camps, community centers, and neighborhood groups, as an enrichment program of activities. In addition to nutrition, the 7-lesson series includes topics on how food grows, kitchen skills, food safety, nutrition, and physical activity.

Community-Based Nutrition Programs

Supplemental Nutrition Assistance Program Education (SNAP-Ed) meets island residents in places where they live, work, eat, and play with age-appropriate nutrition and physical activity education programs. Community-based social media campaigns engage people and technology with SNAP-Ed messages. SNAP-Ed aims to improve the likelihood that people, eligible for or receiving SNAP, will make healthy food and lifestyle choices that prevent obesity.

Guam SNAP-Ed offers three direct nutrition education programs:

- Food Friends and Mighty Moves (FFMM), is a trainthe-trainer food and activity curriculum provided to the Department of Education's Pre-Kindergarten and Guam Head-start programs.
- Plan, Shop, Save, & Cook (PSSC), is an adult curriculum focused on planning meals within limited budgets, while learning skills to understand food labels and pricing.
- Eat Smart, Live Strong (ESLS), is a curriculum designed to improve fruit and vegetable consumption and physical activity among older adults aged 60 and above.

Guam SNAP-Ed utilizes a mobile kitchen and classroom to offer PSSC and ESLS in undeserved neighborhoods or in community settings, in partnership with various housing groups and community programs.

Guam SNAP-Ed also offers 5-2-1-Almost None, a campaign that promotes four specific healthy behaviors: 5 fruits and vegetables per day, no more than 2 hours of screen time, at least 1 hour of physical activity, and almost no sugary drinks. SNAP-Ed currently partners with five elementary schools, eight food stores, and municipal offices in the villages of Agat, Ordot-Chalan Pago, Yigo, Yoña, and Santa Rita. In 2017, 5-2-1-Almost None campaign reached 2,155 village residents in SNAP-approved food stores, as well as 2,567 primary school children who received a variety of school-based intervention initiatives.









Actively Aging

The Preventive Health Project (PHP) goal is to prevent the development of chronic diseases, such as heart disease, diabetes, and obesity. PHP is a partner with the Division of Senior Citizens, teaching evidence-based curricula:

Prevent Type 2 (T2) Diabetes Active Living Every Day (ALED)

Both programs are client-centered, delivered in a group setting presented at Senior Centers throughout the island.

Prevent T2 is a 12-month, structured lifestyle change program for people at risk of developing type 2 diabetes. The program has been completed at Dededo and Mangilao Senior Centers.

ALED is a 12-week program that uses group-based problem-solving methods to integrate physical activity into everyday living. Facilitated by a Extension Professionals, participants decide how to make their lives better through physical activity. This program was implemented in Sinajana, Agat, and Merizo Senior Centers and will be offered in other centers to come.



onday

EFNEP Impacts:



541

Family members



1,198

Contact hours



1,288

Youth on Guam



9,016

Contact hours



SNAP-Ed Impacts:

89% of participants report using the "Nutrition Facts" label to make healthy food choices.



61% of participants report increasing the variety of fruits and vegetables they consume.



66% of participants report planning meals ahead of time and using a shopping list to stay within budget.



71% of participants increased their daily physical activity.



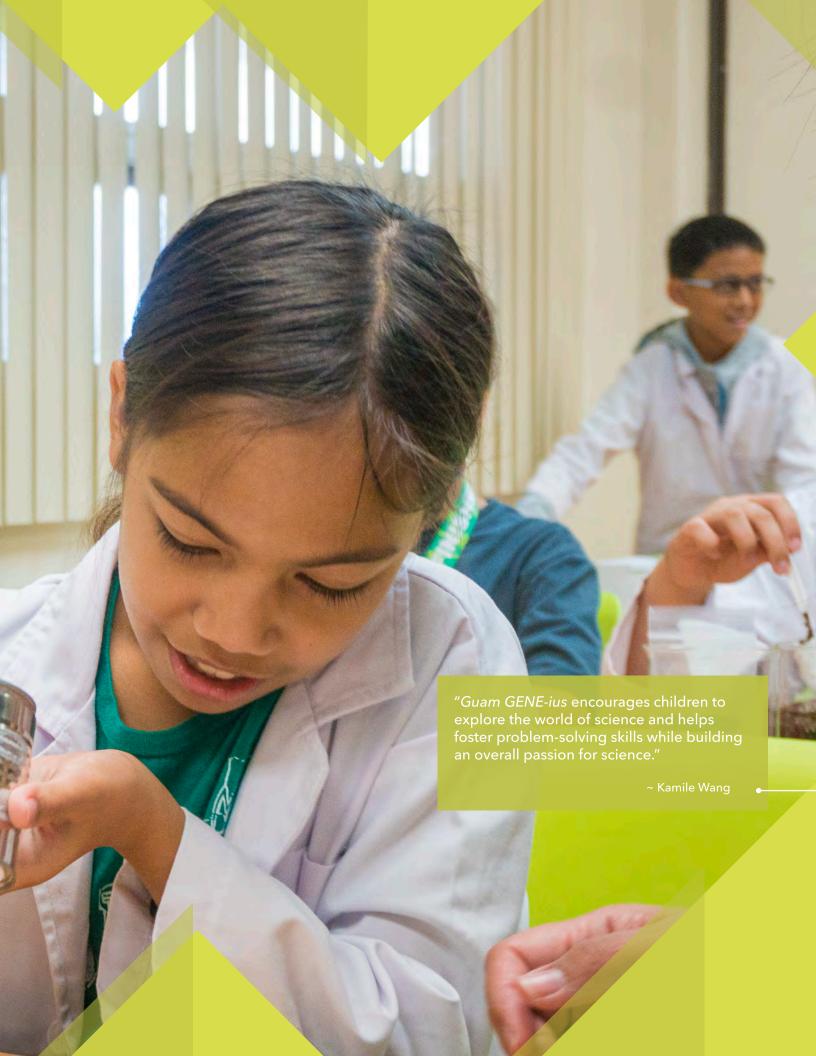








Science Saturdays With no after school STEM youth program offered on Guam, UOG Cooperative Extension & Outreach provided the first step to developing future scientists through the GENE-ius program. Focused on students in grades 4 through 6, youth explored various scientific principles through engaging activities developed by University of Hawai'i at Mānoa. The trial session recruited 52 students, from different school districts, to participate in multiple hands-on activities to enhance critical thinking and problem-solving skills. A pre- and post-test assessment tool for measuring the preparedness and performance of the students indicated a 121% increase in students' knowledge as a result of the course experience. Several parents expressed their interest in enrolling their children in the complete program that expands the focus into multiple science disciplines. An enhanced program is planned for future Saturdays.

















4-H Youth Development STEM Education R



66%

of participants report an increase in knowledge of STEM subject matter.



38%

of participants report increased retention of STEM subject matter.



97%

of participants indicated the use of subject matter in daily activities.



80%

of participants indicated a willingness to volunteer their time for 4-H activities.





Cooperative Extension & Outreach Funding





\$2,973,077 Smith-Lever Capacity Funding



\$16,418 Sustainable
Agriculture Research & Education
(SARE)



\$18,667 Renewable Resources Capacity Grant



\$127,255 Extension Implementation Program (EIP)



\$23,343 Western Sustainable Agriculture Research & Education (WSARE)



\$78,992 USDA/Forest Service (USFS) Guam Casaurina Program



\$138,619 for Expanded Food and Nutrition Education Program (EFNEP)



\$75,784 for Healthy Aging



\$266,737 for Supplemental Nutrition Assistance Program Education (SNAP-Ed) \$20,000 4-H Military Partnership

\$366,089

4-H Science Technology Engineering and Mathematics (STEM) Projects

\$40,155

Plant Disease Diagnostic Training (PDDT) Agricultural Professionals



Jasmine Bassett 4-H Youth Extensiion Assistant II 735-2046 bassettj7270@triton.uog.edu



Gena Rojas **Community Development** Extension Agent II 735-2054 rojasg@triton.uog.edu



Glenda Hall 4-H Youth Extension Associate I 735-2046 ghall@triton.uog.edu



Tanisha Aflague, PhD Community Nutrition Education Program Assistant Professor Phone: 735-2026 Email: taflague@triton.uog.edu



Clifford Kyota 4-H Youth Extension Associate III 735-2044 ckyota@triton.uog.edu



Clarissa Barcinas Community Nutrition Education Program Extension Associate II 735-2029 csnbarcinas@triton.uog.edu



Jeremiah Lorenzo 4-H Youth Extension Assistant I 735-2045 lorenzoj@triton.uog.edu



Katrina Camacho Community Nutrition Education Program Extension Assistant II 735-2030 camachok11154@triton.uog.edu



Monique Mariur 4-H Youth E-xtension Assistant I 735-2092 mariurm@triton.uoq.edu



Kevin Dema-ala Community Nutrition Education Program Extension Associate I 735-2030 dema-alak@triton.uog.edu



Kimberly Mendiola 4-H Youth Extension Assistant I 735-2046 kmendiola@triton.uog.edu



Sheryl De Jesus Food Science Extension Associate I 735-2030 jesussm@triton.uog.edu



Gabrielle Quenga 4-H Youth Extension Assistant I 735-2046 gquenga@triton.uog.edu



Julia-Ann Emelios Community Nutrition Education Program **Extension Assistant II** 735-2030 emeliosj@triton.uog.edu



Peter Barcinas Community Development Extension Agent III 735-2055 pbarcina@triton.uog.edu



Terika Joi Fegurgur **Community Nutrition Education Program** Extension Assistant II 735-2030 tfegurgur@triton.uog.edu



Iesha IbanezCommunity Nutrition Education Program
Extension Assistant II
735-2030
ibanezi@triton.uog.edu



Jesse Bamba Agriculture and Natural Resources Extension Associate III 735-2091 jbamba@triton.uog.edu



Johannah Naputi
Community Nutrition Education Program
Extension Assistant II
735-2030
naputij6058@triton.uog.edu



Rochelle Bamba Agriculture and Natural Resources Extension Associate I 735-2145 rbamba@triton.uog.edu



Rynette Perez
Community Nutrition Education Program
Extension Associate II
735-2020
perezrc@triton.uog.edu



L. Robert Barber Jr., PhD
Agriculture and Natural Resources
Extension Specialist
735-2087
bbarber@triton.uog.edu



Nancy Robert
Community Nutrition Education Program
Extension Assistant II
735-2030
robertn8290@triton.uog.edu



Andrea L. Blas, PhD
Agriculture and Natural Resources
Assistant Professor
735-2140
ablas@triton.uog.edu



LaJoy Spears, PhD Family Life & Development Extension Agent III 735-2024 spearsl@triton.uog.edu



Meghan Borja
Agriculture and Natural Resources
Extension Associate I
735-2053
borjam4624@triton.uog.edu



Jian Yang, PhD Food Science Extension Specialist 735-2027 jyang@triton.uog.edu



Roger Brown
Agriculture and Natural Resources
Extension Associate II
735-2094
rwbrown@triton.uog.edu



Mark Acosta
Agriculture and Natural Resources
Extension Agent I
735-2028
macosta@triton.uog.edu



Hauhouot Diambra Odi, PhD Agriculture and Natural Resources Associate Professor 735-2142 diambraodih@triton.uog.edu



Joseph Afaisen Agriculture and Natural Resources Extension Assistant II 735-2072 afaisenj@triton.uog.edu



Jake Manuel Agriculture and Natural Resources Extension Assistant I 735-2092 manuelj9450@triton.uog.ed



Aubrey Moore, PhD Agriculture and Natural Resources **Associate Professor** 735-2086 aubreymoore@triton.uog.edu



Phoebe Wall Agriculture and Natural Resources **Extension Associate III** 735-2090 pwall@triton.uog.edu



Roland Quitugua Agriculture and Natural Resources **Extension Associate III** 735-2093 quituguarj@triton.uog.edu



lan R. Iriarte Agriculture and Natural Resources Research Associate II 735-2080 iiriarte@triton.uog.edu



Victoria Ann Santos Agriculture and Natural Resources Extension Associate I 735-2053 santosv@triton.uog.edu



Ruth Barnes Administrative Staff Administrative Assistant 735-2040 rbarnes@triton.uog.edu



Robert Schlub, PhD Agriculture and Natural Resources **Extension Specialist** 735-2089 rlschlub@triton.uog.edu



Raeanne Concepcion Administrative Staff Personnel Specailist 735-2003 rosariorc@triton.uog.edu



Jaycia Soulmai Agriculture and Natural Resources Extension Assistant II 735-2028 soulmaij@triton.uog.edu



James R. Hollyer Former Associate Dean & Director Cooperative Extension & Outreach Email: hollyer.uog.cnas.ext@gmail.com



Joshua Sylvia Agriculture and Natural Resources Extension Assistant I 735-2028 sylviaj@triton.uog.edu



Sereana Howard Dresbach, PhD Associate Dean & Director Cooperative Extension & Outreach Phone: 735-2004

Email: shdresbach@triton.uog.edu



DonaMila Taitano Agriculture and Natural Resources Extension Associate I 735-2072 taitanod5954@triton.uog.edu



Kathleen Duenas Administrative Staff Administrative Assistant 735-2051 kduenas@triton.uog.edu



Joe Tuquero Agriculture and Natural Resources **Extension Agent** 735-2085 tuqueroj@triton.uog.edu



Luke Scott Fernandez Administrative Staff Extension Assistant II 735-2092 fernandezls@triton.uog.edu



Megumi Hikichi Administrative Staff Extension Assistant I 735-2146 hikichim@triton.uog.edu



Jane Mendiola Administrative Staff Administrative Assistant 735-2145 janemendiola@triton.uog.edu



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



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

Photo credits and captions

Page 1: Aerial view of University of Guam Agriculture and Life Science building. Photo taken by Luke S. Fernandez.

Page 2-3: Aerial view of Pågo Bay, Mangilao. Photo taken by Luke S. Fernandez.

Page 4-5: Guasåli, a native flower found in the Marianas Islands. Photo taken by Luke S. Fernandez.

Page 6-7: Aerial view of local farmer Bernard Watson in Yigo. Photo taken by Luke S. Fernandez.

Page 8-9: UOG Extension Professional Phoebe Wall at home gardening demonstration. Photo taken by Luke S. Fernandez.

Page 10-11: Donne' Peppers grown by local farmer Bernard Watson in Yigo. Photo taken by Luke S. Fernandez.

Page 12-13: Participants of the Walk to Wellness Program in UOG CNAS garden. Photo taken by Luke S. Fernandez.

Page 14-15: Photo of breadfruit, a native plant of Guam. Photo taken by Luke S. Fernandez.

Page 16-17: Professionals in Agriculture and Natural Resoources lab at UOG. Photo taken by Luke S. Fernandez.

Page 18-19: Extension Professor Aubrey Moore, PhD, and student Jake Manuel, during an insect identification exercise. Photo taken by Luke S. Fernandez.

Page 20-21: CNEP Professionals Terika Fegurgur and Julie-Ann Emelios conduct food demonstration at a local supermarket. Photo taken by Luke S. Fernandez.

Page 22-23: CNEP Professional Terika Fegurgur conducts EFNEP lesson at M.U. Lujan Elementary School. Photo taken by Luke S. Fernandez.

Page 24-25: Extension Professionals (from left) Tanisha Aflague, Terika Fegurgur, Iesha Ibane, and Rynette Perez at annual UOG Charter Day events. Photo taken by Luke S. Fernandez.

Page 26-27: Preventive Health Project Professional Kevin Dema-ala with participants. Photo taken by Luke S. Fernandez.

Page 28-29: CNEP Professional Terika Fegurgur conducts EFNEP lesson at M.U. Lujan Elementary School. Photo taken by Luke S. Fernandez.

Page 30-31: Professor Bob Bevacua and students at Valley of the Latte pineapple farm in Talofofo. Photo taken by Luke S. Fernandez.

Page 32-33: Science Saturday participants in astronomy activity. Photo taken by Luke S. Fernandez.

Page 34-35: Participants engage with professionals during research-based activity. Photo taken by Luke S. Fernandez.

Page 36-37: 4-H Youth learn how to throw talåyas (fishing nets) during the 4-H Youth Fisheries Summer Camp. Photo taken by Jasmine Bassett.

Page 38-39: C. L. Taitano Elementary School students plant garden as their 4-H lesson. Photo taken by Jasmine Bassett.

Page 40-41: C. L. Taitano Elementary School student transplanting plants as part of 4-H program. Photo taken by Jasmine Bassett.

Design, layout, and graphics by Luke S. Fernandez.



303 University Drive UOG Station Mangilao, Guam 96923



1 671 735 2080



http://cnas-re.uog.edu/



@cnasrei



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