

ESTABLISHMENT OF GUAM ENVIRONMENTAL PUBLIC HEALTH LABORATORY TO ENHANCE FOOD SAFETY AND MOSQUITO CONTROL IN GUAM AND REGION

M. THOMAS NADEAU
CHIEF ENVIRONMENTAL PUBLIC HEALTH OFFICER
DIVISION OF ENVIRONMENTAL HEALTH
GUAM DEPARTMENT OF PUBLIC HEALTH AND SOCIAL SERVICES
SEPTEMBER 5, 2018
PIHOA 64TH EXECUTIVE BOARD MEETING
ALA MOANA HOTEL
HONOLULU, HAWAII

BACKGROUND: FOOD AND MOSQUITO PROGRAMS

- ▶ Guam Environmental Public Health Laboratory (GEPHL)
 - ▶ Vector-borne Disease Lab and Food Screening Lab
 - ▶ Occupied 2017; still building the foundation of the two labs
 - ▶ Assistance from CDC, PIHOA, USFDA
- ▶ GEPHL revived mosquito program and enhanced food safety program
 - ▶ Mosquito program previously inactive; Zika timing
 - ▶ No testing of food on Guam

GUAM'S STRATEGY

▶ Mosquito Control

- ▶ Conduct surveillance and control to prevent introduction of MBD
- ▶ Trap, identify and record; test for pathogens and insecticide resistance
- ▶ Expand services to region as reference lab

▶ Food Safety

- ▶ Inspect food facilities to enforce Guam Food Code to prevent Fbi
- ▶ Test food, water, and environmental samples for surveillance & outbreaks
- ▶ Expand services to region as reference lab

MOSQUITO CONTROL:

Guam Vector Management Strategic Plan 2017-2020

- ▶ Plan's strategic operational goals
 - ▶ Keep Guam free of *Ae. aegypti*
 - ▶ Prevent and control outbreaks
 - ▶ Maintain effective year-round surveillance
- ▶ Method
 - ▶ Surveillance: Collect adult & larval mosquitoes
 - ▶ Laboratory: Rear, sort, identify, and test mosquitoes
 - ▶ Control: Source reduction and larval control
 - ▶ Outreach and education



VECTOR-BORNE DISEASE LABORATORY

● Surveillance

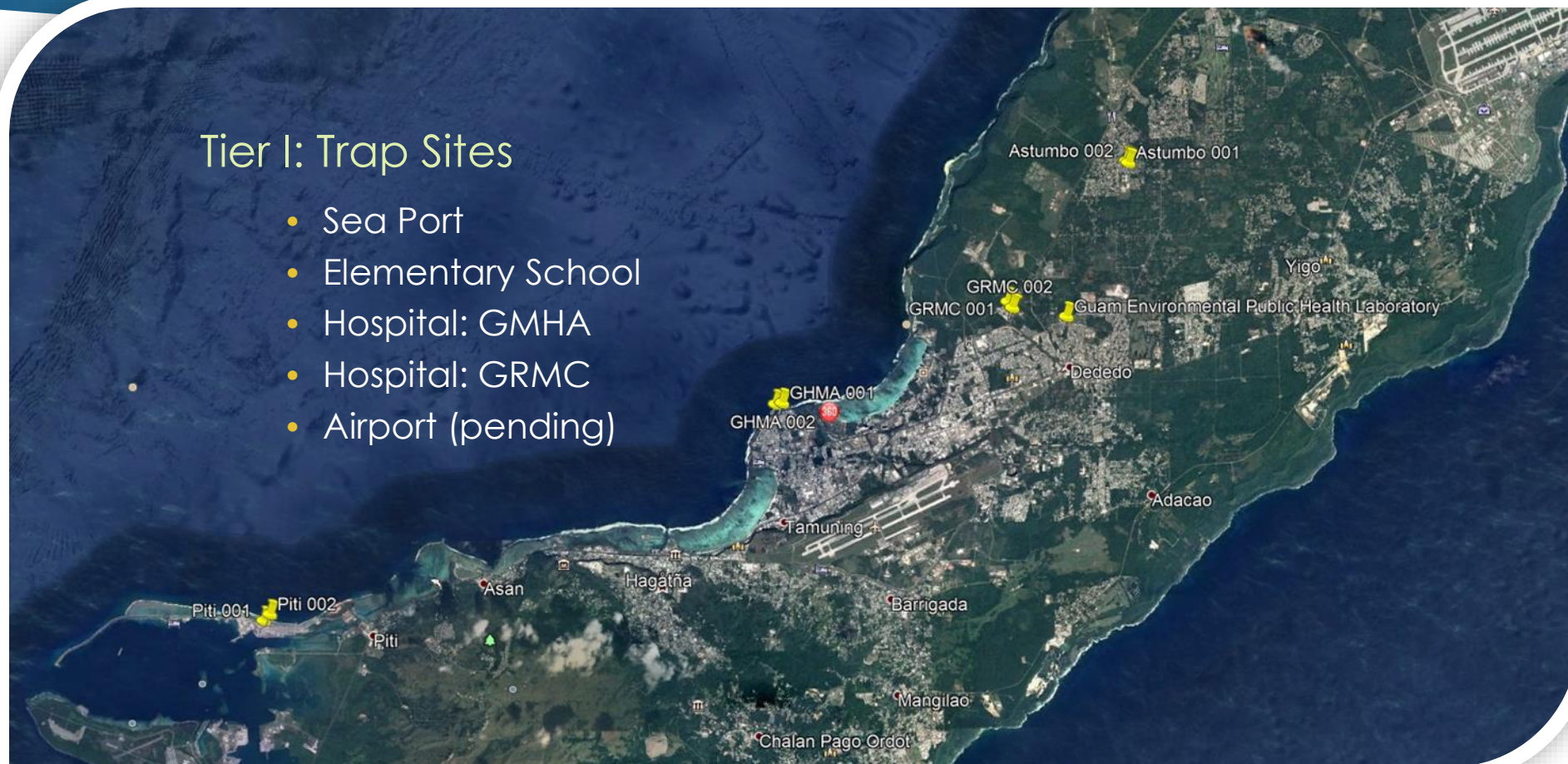
Tier I (Implemented)

Tier II (Pending)

Tier III (Pending)

Tier I: Trap Sites

- Sea Port
- Elementary School
- Hospital: GMHA
- Hospital: GRMC
- Airport (pending)





VECTOR-BORNE DISEASE LABORATORY

○ Surveillance



Adult Trapping



Larval/Pupal
Sampling



Ovitraping



VECTOR-BORNE DISEASE LABORATORY

Surveillance



















Surveillance

Resistance

+ Add Record

Show 10 rows

Search:

Del 	CountyName 	TrapType 	AttractantsUsed 	TrapID 	Latitude 	Longitude 	Address 	To
	Guam	BGS Trap	Lure	GU12-18.0209-1030-JG-A-001	13.461615	144.666066	Port Authority of Guam, Site 1	Piti
	Guam	BGS Trap	Lure	GU12-18.0209-1033-JG-A-002	13.462063	144.666615	Port Authority of Guam, Site 2	Piti
	Guam	BGS Trap	Lure	GU12-18.0209-1033-JG-A-002	13.462063	144.666615	Port Authority of Guam, Site 2	Piti
	Guam	BGS Trap	Lure	GU12-18.0214-0956-CT-A-001	13.554288	144.84755	Astumbo Elementary School, Site 1	De
	Guam	BGS Trap	Lure	GU12-18.0214-0956-CT-A-001	13.554288	144.84755	Astumbo Elementary School, Site 1	De
	Guam	BGS Trap	Lure	GU12-18.0214-0959-CT-A-002	13.554268	144.847007	Astumbo Elementary School, Site 2	De
	Guam	BGS Trap	Lure	GU12-18.0214-0959-CT-A-002	13.554268	144.847007	Astumbo Elementary School, Site 2	De
	Guam	BGS Trap	Lure	GU12-18.0214-1105-JG-A-001	13.462344	144.665926	Port Authority of Guam, Site 1	Piti
	Guam	BGS Trap	Lure	GU12-18.0214-1105-JG-A-001	13.462344	144.665926	Port Authority of Guam, Site 1	Piti
	Guam	BGS Trap	Lure	GU12-18.0214-1107-JG-A-002	13.462068	144.665934	Port Authority of Guam, Site 2	Piti

Showing 711 to 720 of 737 entries



CAL SURV California Vectorborne
Disease Surveillance Gateway

Sites Arthropod Sentinel Carcass Application Resistance Tools Settings Help Logout

New Site Manage Sites Site Groups

Manage Sites

Code	Name	Region	City	Postal Code	# of Revisions	Latitude	Longitude	Actions
000000	Guam Department of Public H...	Guam	Mangilao	96913	1	13.439528	144.795685	edit
000001	Port Authority of Guam (PAG)	Guam	Piti	96915	1	13.461530	144.670263	edit, delete
000002	A.B. Won Pat International ...	Guam	Tamuning	96913	1	13.485414	144.800765	edit, delete
000003	Astumbo Elementary School	Guam	Dededo	96929	1	13.553597	144.847860	edit, delete
000004	Guam Memorial Hospital	Guam	Tamuning	96913	1	13.504801	144.775600	edit, delete
000005	Guam Regional Medical City ...	Guam	Dededo	96912	1	13.525991	144.822472	edit, delete
000010	ABWPPIA 001	Guam	Tamuning	96913	1	13.492345	144.804926	edit, delete
000012	PAG 001	Guam	Piti	96915	1	13.461403	144.667162	edit, delete

Code	Name	Region	City	Postal Code	# of Revisions	Latitude	Longitude	Actions
------	------	--------	------	-------------	----------------	----------	-----------	---------

1 / 1 25

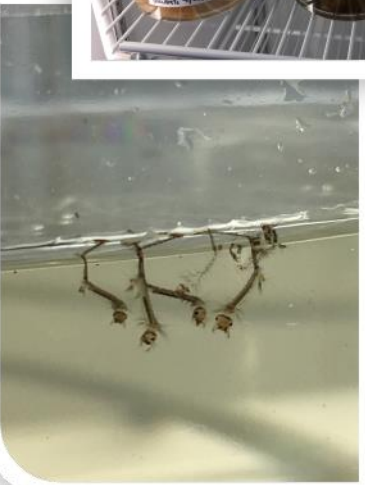
Search Clear

Go To Sites Menu



VECTOR-BORNE DISEASE LABORATORY

○ Laboratory



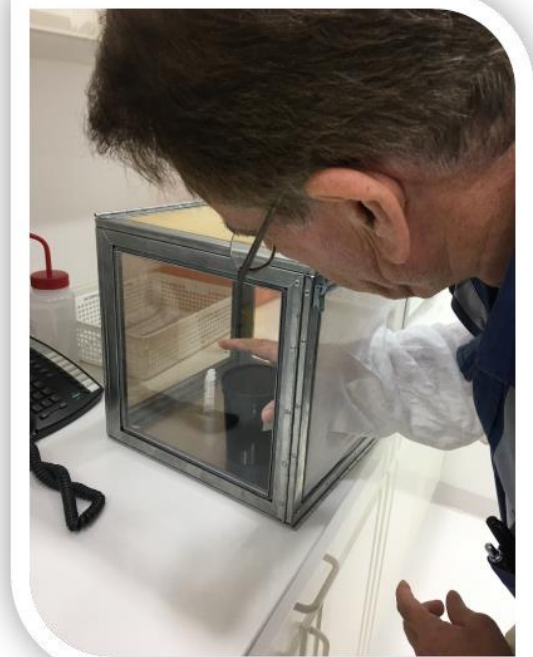
Rearing



Sorting



Identification



Colony
Maintenance



VECTOR-BORNE DISEASE LABORATORY

● Laboratory



Archiving



Insecticide
Resistance





VECTOR-BORNE DISEASE LABORATORY

● Laboratory

Pathogen Detection



Source: Responsebio.com



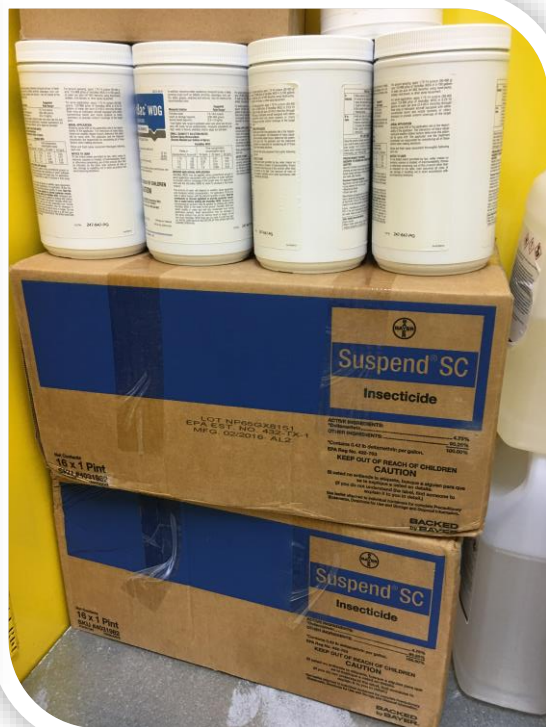


VECTOR-BORNE DISEASE LABORATORY

◉ Vector Control



Mosquito Bits[®], Vectobac[®], & Suspend SC



450 STIHL Back Pack Sprayer (Mist-blower)



ECHO MS-402 Back Pack Sprayer (Piston-pump)



Response

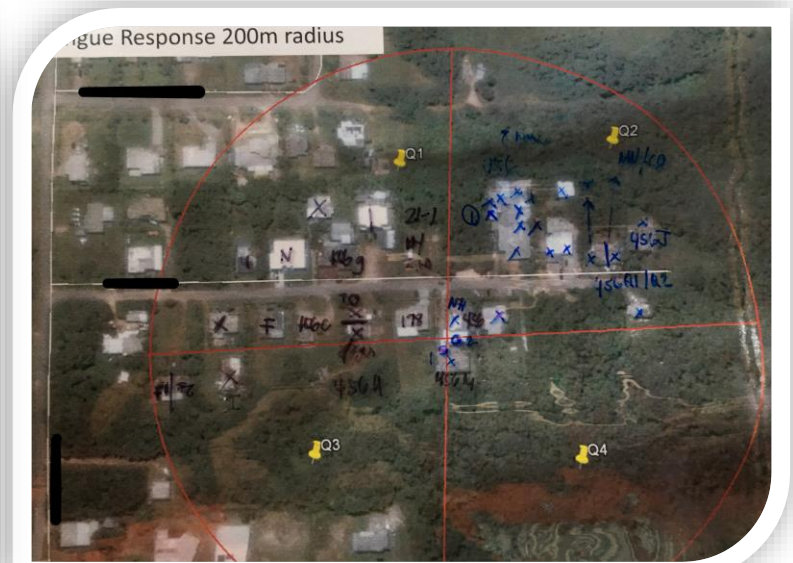


Education and Notification

Enhance vector control



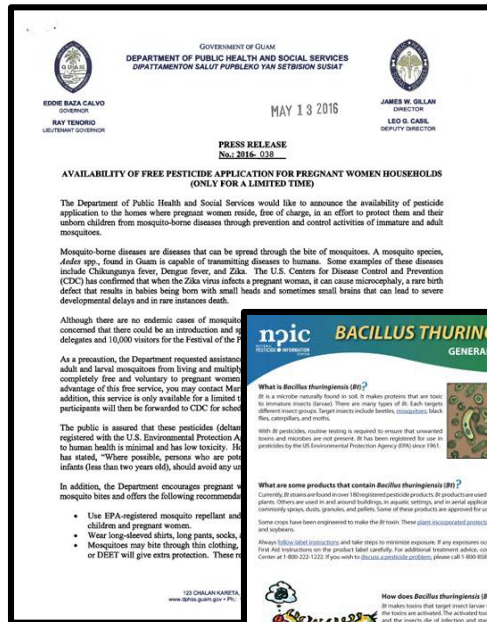
Enhance vector surveillance





VECTOR-BORNE DISEASE LABORATORY

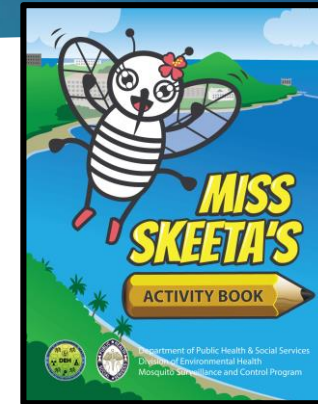
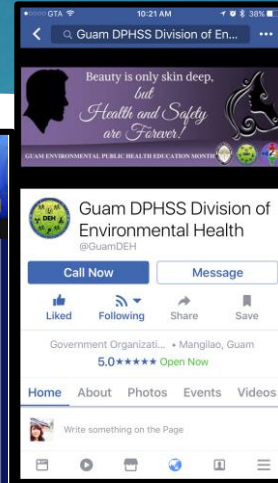
Education Campaign



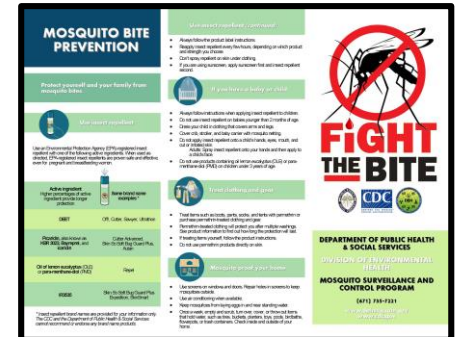
Press releases



Media



Poster, brochures, & books

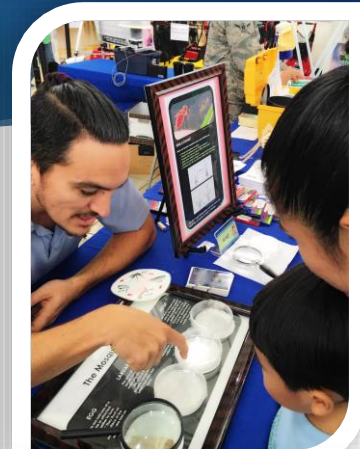




VECTOR-BORNE DISEASE LABORATORY

Education Campaign

Fairs and outreach activities





VECTOR-BORNE DISEASE LABORATORY

○ Certifications/Training

- CORE Certification, Guam
- CAT-7a Certification for Applicator of Restricted Pesticides, Guam
- FMCA Dodd Short Courses, Florida
- U.S. Navy's Pesticide Applicator 2017 Training Course, Fiji
- World Health Organization's Integrated Vector Management Workshop for Pacific Island Countries, Training of the Trainers, Fiji
- U.S. CDC Medical Entomology Course, Guam
- NSW Health Pathology: Mosquito Surveillance and Control Professional Development and Training, Australia
- **MOU with Pacific Community (SPC)**
 - **SPC: Entomology training to PICTs**
 - **DEH: Venue for entomology training**





VECTOR-BORNE DISEASE LABORATORY

PENDING

- ◉ Increase Surveillance
 - Implement Tier 2 and Tier 3
- ◉ Increase Laboratory Capacity
 - Testing (antigen detection, PCR, and insecticide resistance)
 - Recruit additional staff
- ◉ Increase Vector Control capability
 - Obtain equipment (ex: trucks and truck mounted sprayers)
- ◉ Develop and Sustain Mosquito Advisory Council
- ◉ Implement “Pacific Island Vector Management Improvement Strategy”
- ◉ Serve as a Reference Laboratory for the Pacific Region

FOOD SCREENING LABORATORY

- ◉ Respond to Fbi outbreaks and sample food imports
- ◉ Food lab delayed due to facility challenges
- ◉ Collaborating with USFDA-SF District and Oregon Center of Excellence (capacity building)
- ◉ Equipment purchased; microbiology training received
- ◉ Seek to become a certified lab
- ◉ Serve as reference lab for region

Equipment



Pass-thru autoclave



Biosafety cabinet



VIDAS



Incubator

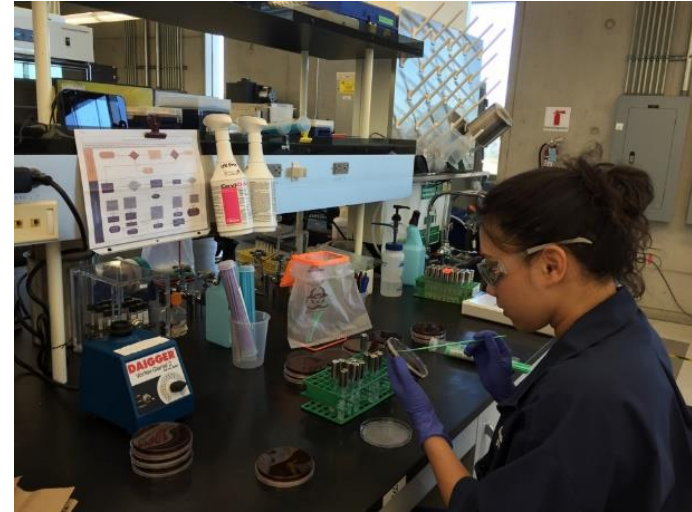
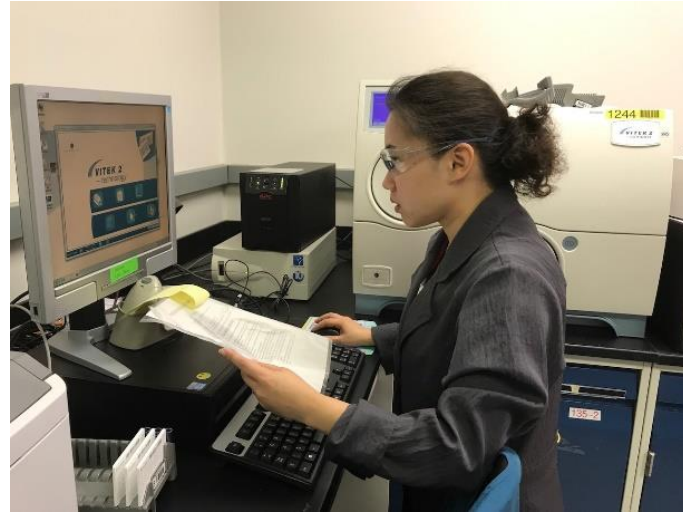
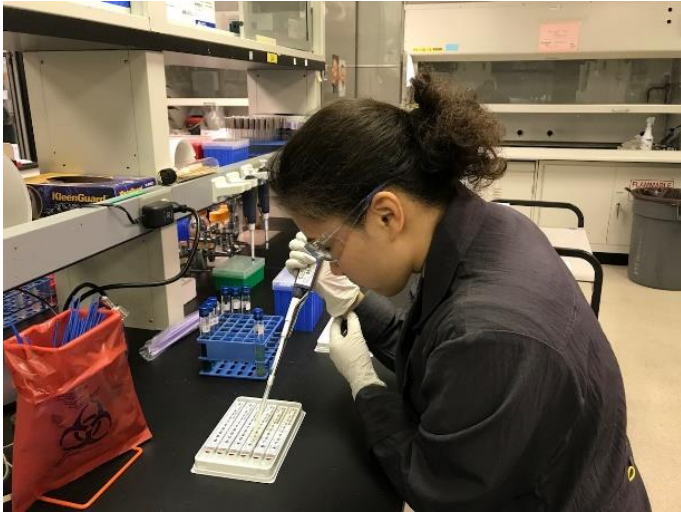


Ultra-low freezer



IDEXX

Microbiology Training



Seeking the Board's (continued) support...

- ▶ Environmental health in the region (via NPEHA)
- ▶ Vector-borne Disease Laboratory
- ▶ Proposed regional vector plan

THANK YOU !

DIVISION OF ENVIRONMENTAL HEALTH

Department of Public Health and Social Services

TEL. (671) 735-7221

FAX (671) 734-5556

EMAIL: dphss-deh@dphss.guam.gov

MTNadeau: masatomo.Nadeau@dphss.guam.gov

WEBSITE: www.dphss.guam.gov