Representative
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Proudly serving State House District 5 - North Kona, South Kona, West Kaʻu

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Aloha!

Here we are in 2018 at the start of another legislative session.

I will again be Chair of the House Agriculture Committee which has been expanded to include animal welfare.

We need a new hospital in West Hawaii and my plan for a University affiliated medical center will teach new doctors, nurses and nurse-practitioners, physician assistants and other health care providers in conjunction with Palamanui Community Hospital. I am hoping that the feasibility study, which is well funded, will move forward this year.

Inside we list some of the bills that passed last year and important new bills for this year.

The rat lungworm problem is worsening, and we will push even harder this year for funding research to control and treat this horrible disease. This issue is affecting our health, our farmers, our food, and our tourism industry. Thank you for allowing me to continue to represent our district and I look forward to working with you to keep improving our schools, our economy and our community.

Richard Creagan

Left: Celebrating passage of the Tiny Homes bill out of the Legislature with Representative Evans. Center: Accepting the Humane Society's Legislator of the Year Award. Right: Senator Green and Representative Creagan hosting a telehealth conference to celebrate the Governor's proclamation of November 18 as ***Rural Health Day****.*

E-SUBSCRIBE

One of my continuing goals is to establish a more expedited way of being available to you.

I know we all receive many email requests, but if you would consider subscribing to my e-communications, it would really help me to both **update** you and **get your opinion** on a more timely basis.

I need you as a sounding board and hope this method of communication will enable us to dialogue more effectively.

To sign up, please email my office at:

repcreagan@capitol.hawaii.gov

Representative Richard Creagan
Hawaii State Capitol, Room 331
Honolulu, HI 96813

Budget Highlights

Hawaii Island secured more than $331M in Capital Improvement Project monies (FY2018-2019). Additionally, non-profit organizations on our island secured $5.4M via Grant-In-Aid funds.

Large sum infrastructure improvements for **West Hawaii** include:

- $14.8M for Kona International Airport improvements
- $3.6M for Kealakehe High School track, performing arts center and gym design and improvements
- $1.7M for Community Health Centers

Appropriations specific to our community are at right.

Kaʻu Water System	$1,500,000
Plans, design, and construction for development of a water system.	
Naʻalehu Elementary School	$1,200,000
Design and construction for new covered walkways, grounds and site Improvement.	
Konawaena High School	$485,000
Plans, design, construction and equipment to replace building gutters, renovate restrooms, and replace gymnasium lighting and scoreboards.	
Ke Kula ʻO ʻEhunuikaimalino School	$186,000
Design and construction for campus-wide repair and maintenance, including electrical upgrades.	
Aloha Performing Arts Company	$100,000
Aloha Theater renovations	

2017 Legislative Recap

To review the complete language of the following bills, search the bill number (ex. SB786) on our legislative website, www.capitol.hawaii.gov.

Community

Blood Quantum and Hawaiian Home Lands (HB451)

Reduces the minimum Hawaiian blood quantum requirement of certain successors to lessees of Hawaiian home lands from one-quarter to one thirty-second.

University of Hawaii (HB847)

Establishes the Innovation and Commercialization Initiative Program to expressly give the University of Hawaii the legal authority to create, promote, and participate in new economic enterprises and expand workforce opportunities based on inventions and discoveries generated by or at the University.

Kupuna Caregivers Program (HB607)

Authorizes the Executive Office on Aging to establish the Kupuna Caregivers Program to assist community members in obtaining care for elders while remaining in the workforce. Clarifies the kupuna service and support options provided by area agencies on aging within the program. Appropriates funds for establishing and implementing the Kupuna Caregivers Program. (HB607 CD1)

Healthy Aging Partnership (HB615)

Appropriates funds for the Healthy Aging Partnership Program to further the program's important role in improving the health and well-being of Hawaii's kupuna.

Health

Opioid Therapy (SB505)

Requires healthcare providers to adopt and maintain policies for informed consent to opioid therapy in circumstances that carry elevated risk of dependency. Establishes limits for concurrent opioid and benzodiazepine prescriptions. Clarifies Board of Nursing authority to enforce compliance with Uniform Controlled Substances Act.

Medical Cannabis (SB786)

Amends Hawaii Revised Statutes and Hawaii Administrative Rules to substitute references to "medical marijuana" and like terms with "medical cannabis" and similar terms. Requires the Department of Health to make all conforming revisions to Administrative Rules upon their next amendment.

Medical Cannabis (HB1488)

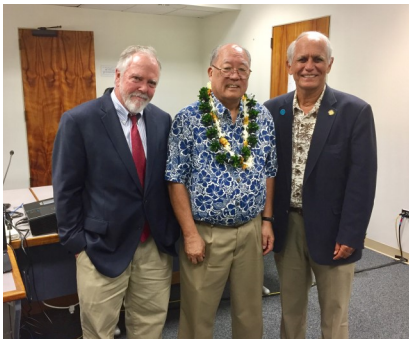
Last session the legislature found the delay in implementing medical marijuana dispensaries is negatively affecting patient care. The latest estimate by the State says that at least one Big Island dispensary will open in 2018. HB1488 increases the total number of plants a patient may grow from seven to ten, expands the qualifying conditions for medical cannabis certification to include rheumatoid arthritis, lupus, epilepsy, and multiple sclerosis. The bill also extends the date when primary caregivers will no longer be able to cultivate cannabis for their patients from 2018 to 2024.

2017 Agricultural Highlights

"Agriculture is our wisest pursuit, because it will in the end contribute most to real wealth, good morals, and happiness." Thomas Jefferson

Hemp Special Fund (SB773)

Amends the Industrial Hemp Pilot Program by restricting cultivation of industrial hemp under the pilot project to agricultural lands and requires counties to recognize it as an agricultural product, use, or activity. Allows license application year-round. Repeals certain restrictions to facilitate industry growth.



Left: Senator Gabbard and I honored Henry Ako for his efforts as the lead investigator in the Industrial Hemp Research Project.

Right: In 2015 I visited an open hemp field in Boulder, Colorado as part of a legislative conference.

Kulani Correctional Facility Agriculture Operation (HB478 Budget)

Appropriates funds for full-time temporary management positions and equipment for Kulani and Waiawa correctional facilities' agriculture operations. These programs allow inmates to learn horticultural skills in addition to valuable workplace experience for the future.

FSMA Farmer Assistance (HB453)

Requires the Department of Agriculture to provide grants to farmers to assist them in paying for the costs of compliance with the FDA Food Safety Modernization Act, FDA regulations, and state food safety laws. Appropriates funds.

Invasive Species Control (HB451)

Authorizes the counties, through their employees or authorized agents, to enter private property to control or eradicate invasive species and pests.

Biosecurity (HB1325)

Requires the Department of Agriculture to establish and report to the Legislature on parameters and construction requirements for biosecurity facilities to ensure the safety of agricultural and food commodities.

Coffee Berry Borer Subsidy Program (HB186)

Extends the sunset date for the Coffee Berry Borer Pesticide Subsidy Program until June 30, 2021, for the purchase of pesticides containing Beauveria bassiana to combat the coffee berry borer. Each coffee grower can receive up to $6,000 per year in subsidies between June 30, 2018 and July 1, 2021. Pictured below, Governor Ige signs HB186 into law.

Invasive and endangered species task force (SR26)

Requesting the Department of Agriculture and Department of Land and Natural Resources to identify economic, environmental, and regulatory consequences of crop degradation caused by invasive and endangered species.

Environment

Hawaii accepts the Paris Agreement regarding Climate Change (SB559)

Requires the State to expand strategies and mechanisms to reduce greenhouse gas emissions statewide in alignment with the principles and goals adopted in the Paris Agreement.

Above: Governor David Ige signs SB559 into law

Above: Bill signing of SB882 with Governor Ige and others. This Bill designates the month of October as "Farm to School Month in Hawaii."

Schools in the District

Na‘alehu Elementary School

While visiting Na‘alehu Elementary School for a Department of Education site visit, Student Council President Kaelyn Medeiros Shibuya and I presented a certificate to **Principal Darlene Javar** for her innovative methods to improve the learning environment for teachers and students. She is the recipient of the Masayuki Tokioka Excellence in School Leadership Award. Principal Javar plans to use $15,000 of her award for the school garden.

Konawaena High School

I visited **Tina Alcain** at the Konawaena Agriculture Farm to discuss how to improve the agriculture program. Tina teaches 120 students and the farm is located on campus. We hope to provide funds for tools and resources to help Tina teach our next generation of farmers.

Above: Tina and I are pictured on the Konawaena Agriculture Farm

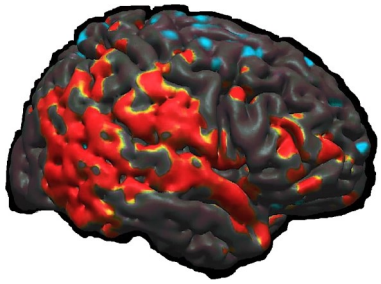
Raina Whiting, a Kindergarten teacher at Na‘alehu Elementary was accepted into the Rural School Leadership Academy. The program has a cohort of 40 educators from rural regions across the nation. Participants receive leadership development paired with visiting multiple rural regions and rural schools throughout the two-year program. Ms. Whiting has visited North Carolina and New Mexico schools this year and will be visiting Idaho shortly. The selection for participants is selective and the program seeks individuals who demonstrate leadership qualities and currently teach or lead in a rural region.

Above: Na’alehu Elementary School teacher Raina Whiting

In addition, Ms. Whiting has secured more than $7,000 in grant funding for her students and keiki in the community for art, music, agriculture, gardening, science, and more. She hosts community events and utilizes the funding to support student learning in her classroom.

Agriculture & Health Goals for 2018

Banning of Chlorpyrifos



Above: Brain damage after fetal chlorpyrifos exposure. Source: Trump's Legacy: Damaged Brains, New York Times, Nicholas Kristof October 28, 2017

Chlorpyrifos is an organophosphate pesticide that is closely related to the nerve agent Sarin which killed hundreds in Syria. It is much more toxic than DDT which has long been banned in the United States, but the agrochemical companies led by Dow Chemical Company, its inventor, have kept it on the market.

Farmers have tried to preserve this dangerous but effective pesticide for emergency agricultural situations and with great precautions to prevent its acute toxicity, it has been used with acceptable risk. Unfortunately, at even extremely low concentrations and with chronic exposure of the mother, chlorpyrifos can damage the brains of unborn babies. Recognizing that, the EPA banned it for indoor use in 2001. For similar reasons the European Union banned it for indoor and outdoor uses in 2016. The EPA was set to ban it for all food crops in 2017, but after Scott Pruitt was appointed to run the EPA by President Trump he promptly reversed that decision.

In December, California recognized the dangers of chlorpyrifos and it has been added as a Developmental and Reproductive intoxicant under Proposition 65. Studies in California have shown that children born to mothers who lived within one mile of agricultural activities have an over fifty percent added risk of autism.

Our state has no effective mechanism for protecting pregnant women or their unborn babies from this brain damaging poison or for monitoring babies for its effects after they are born. Buffer zones will not be enough. We need to keep this out of our state.

It is time we protect our unborn babies. I introduced a bill to ban chlorpyrifos last session but as it was thought that the EPA would be acting on a federal level my bill didn't pass. I am introducing another bill this session to finally eradicate this poison. The agrochemical companies will undoubtedly oppose it, but with your support it will pass.

Agriculture Theft

As local farmer Richard Ha has famously said ***"If the farmer makes money, the farmer will farm".*** If the farmer loses money through theft of his crops, animals or equipment, he might not be able to farm**.**

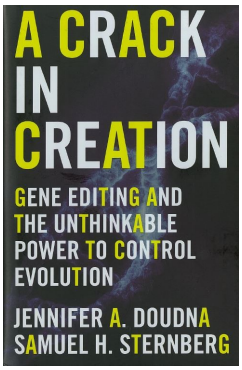
Agricultural theft is a major problem for farmers and families in Hawaii. I attended a forum on October 17 with Ken Love, Senator Mike Gabbard, Hawaii County Prosecutor Mitch Roth and numerous concerned citizens to discuss the issue. One of the conclusions was that Agricultural theft investigators could reduce the demand by stopping grocery stores and farmer's market vendors from buying stolen produce.

I introduced a bill last session, HB783, to fund an ag investigator. It did not pass but the Department of Agriculture did provide funds for a single temporary ag investigator as a pilot. I am introducing a new bill this session to hire two Ag Theft investigators for the Big Island to reduce ongoing theft.

Above: Rep. Creagan addresses the ag theft meeting

CRISPR Cas-9 Gene Drive Technology

Imagine Hawaii without invasive species like little fire ants, coqui frogs, mosquitoes, fruit flies, coffee berry borer beetles and rat lungworm snail and slug vectors. An amazing new, precise and safer gene editing process called CRISPR Cas9 has been invented in part by Dr. Jennifer Doudna, a UC Berkeley professor, who grew up in Hilo, and who should soon be winning a Nobel prize. That process could eliminate those pests, not just control them. Read the book (I have copies to lend out) and you will start to believe this could be done on our island in our lifetime. There is much research to ensure safeguards will be in place, but I am excited for what this could mean for the future of agriculture and our health. She will be at UH Hilo this year to talk about her work; contact our office for details.



Right: Jennifer A. Doudna's book which was published in 2017

New West Hawaii Hospital

My highest priority for West Hawaii and Hawaii Island is a new hospital, which we desperately need. The existing hospital is in the wrong place for the current population and is physically constrained by its location as well.

A site for a new hospital and medical center near the airport seems ideal as State land, infrastructure, access to air and land transportation, and a community college campus (Palamanui) which could help train health care providers are all available.

A new type of medical center is also needed. The John A Burns School of Medicine (JABSOM) has never had its own teaching medical center, a place where the much-needed future doctors, nurses, nurse practitioners, physician assistants and the range of auxiliary health care providers can learn. I envision training programs for physicians in family practice, internal medicine, pediatrics, community psychiatry, and possibly emergency medicine. Training programs for primary care nurse practitioners would also be included.

I approached JABSOM Dean Jerris Hedges and his leadership team about helping to develop a university affiliated teaching medical center and they were very supportive. Queens Medical System might be another partner in that enterprise and CEO Art Ushijima and his team were also supportive, but requested a feasibility study.

With the help of my fellow legislators and the support of the House leadership, $500,000 for a feasibility study to consider building a UH-affiliated teaching hospital on State land near Palamanui Community College was appropriated. We are currently seeking release of those funds to start that study.

A medical-school affiliated medical center on the Big Island would dramatically improve the status of health care for both West Hawaii and all of Hawaii Island. A medical center adjacent to Palamanui would strengthen the ability of that institution to provide additional medical training programs in conjunction with hands-on training.

Studies have shown that doctors and nurses will often choose to live where they received their

training, and that is what we need to grow our neighbor island health care workforce.

When this new hospital comes to pass, I would envision that the current Kona Hospital would stay in business as a critical access rural hospital like the ones in Kaʻu, Kohala, and Honokaʻa, with an emergency department, a small number of acute care beds, long-term-care capability, and outpatient clinics.

I am hopeful that this new medical center will provide some of the services not currently available, such as interventional cardiology, an inpatient adolescent behavioral health unit, a hyperbaric center to treat diving accidents and improve diabetic wound care, and a higher level of trauma care. Telemedicine is a critical and rapidly expanding area of health care and this facility would be designed and constructed with that in mind.

A hospital is not only a provider of health-care, it is an economic engine that provides well-paying, rewarding employment. Helping others is a major source of happiness and keeping people healthy and restoring them to health is one of life's highest callings. This medical center will undoubtedly be larger and will provide more jobs, and they will be good jobs with meaning and purpose.

Making sure those are union jobs will be very important to our community. In my view, union protections are essential to empower health workers to stand up for good patient care and I want this to be a medical center that its employees and our island will be proud of and I think we can get this done.

Rat Lungworm Disease, Cont.

I am proposing that a position for a **Public Health Veterinarian** be reinstituted in the Department of Health to help with this zoonosis as well as the other zoonoses that affect our islands. Leptospirosis is a zoonosis that was dealt with in an outstanding way by Dr. David Sasaki who was a veterinarian with the health department when I worked there as an epidemiological specialist.

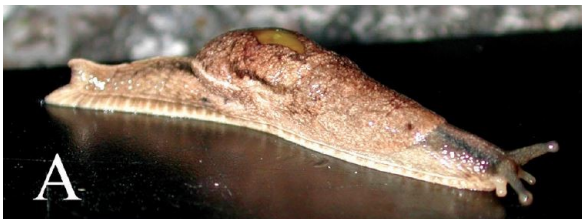
The District Health Officer in each Neighbor Island County is supposed to be a physician. That is the case in Maui County and Kauai County, but is no longer the case in Hawaii County where one is sorely needed to coordinate on-island responses to outbreaks like dengue and rat lungworm. I am submitting a bill to mandate that the Department of Health correct that and again have a physician District Health Officer on Hawaii Island.

Agriculture & Health Goals for 2018, Cont.

For more information call the
Department of Health Disease Reporting Line
(808) 586-4586
or visit: www.health.hawaii.gov

Rat Lungworm Disease (*Angiostrongylus cantonensis*)

Rat Lungworm disease is a disease of animals that is spread to humans. It does not spread from human to human. The parasite life cycle (diagrammed on page 8) is complicated, but in its simplest form involves 5 different larval stages that the worm goes through, and two hosts, rats and snails. Perhaps the main point is that the forms in the rat are NOT infectious for humans, whereas one form in the snail, the third larval stage, IS infectious for people. Humans are exposed to that third larval stage if they eat uncooked snails or slugs, or even if, as little children do, they lick or chew them. A human might also eat a few third stage larvae shed by a slug on produce or in water or other liquids (e.g. kava). In some animals that eat the slug, the 3rd stage larvae remain alive and infectious (called transport or paratenic hosts), and humans become infected if they eat, for example, an infected incompletely cooked prawn or frog. Many other animals such as dogs, cats and horses become infected in the same way as humans. In people and these animals, the parasite travels to the spinal cord and brain and causes inflammation and damage, and then dies. Sometimes the parasite travels from the brain to the lungs before it dies.



Shown above: Semi-slug with the incomplete shell exposed

Hawaii has a long history with this disease and had the first two cases documented in the Western scientific literature at Hawaii State Hospital in 1959, two patients died. The parasite, *Angiostrongylus cantonensis*, was found in their brains. Two decades of intense research in Hawaii then followed. That research has been largely ignored and forgotten.

There were only sporadic cases in Hawaii for many decades with rare deaths. There was little concern about the disease and the health department did not require reporting of the disease until about 2007. The National CDC did not require reporting as the United States rarely had cases outside of Hawaii. There was little attempt to treat the disease in Hawaii, although anthelminthics (anti-parasite medication) showed substantial promise elsewhere, especially when given early.

We are now seeing a surge of cases, and more serious cases, very likely due to the increased presence of the semi-slung *Parmarion martensi* which seems to be attracted to the human habitat and is very infectious. One slug in a pail of kava on Hawaii Island appeared to infect 6 people. We know the infectious L3 can survive for prolonged periods in water and we need to know if the ubiquitous water catchment tanks are a source of disease, and if so, how we can make them safe.

We need to know how leafy greens and other produce grown in high risk areas can be reliably made safe, not just safer.

In the past the course of the disease was often benign, but that is no longer the case, and we urgently need better, quicker diagnostic tools so that the disease can be detected earlier at a stage that treatment will have maximal effect.

A recent paper from Australia reviewing three infants that died strongly argues that early recognition and early treatment could prevent death and disability in Hawaii and our Health Department needs to understand that.

There is also a silent epidemic of this disease in Hawaii in our pets, in our cats and dogs and horses, that needs to be acknowledged and treated. Perhaps we will learn some lessons in saving our pets that can be applied to ourselves.

Fellow Legislators and I will again support a bill for Dr. Susan Jarvi's group and the pharmacy school to conduct much-needed rat lungworm research. I am also supporting a clinical rat lungworm center for diagnosis, treatment and much needed long term follow-up at Hilo Hospital, in conjunction with their family practice residency program.

Continued on previous page, Page 6

Above: The Department of Health held a press conference to convey how rat lungworm is being addressed in the State. Upon leaving, Representative San Buenaventura and I were frustrated with the inadequate efforts and interviewed on Hawaii Public Radio.

Rat Lungworm Cycle

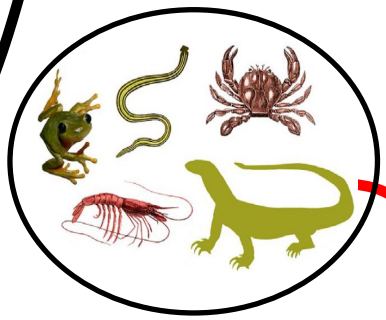
First-stage L1 larvae passed in feces

Definitive Hosts

Rodents ingest L3 larvae that mature into adult worms that mate and lay eggs that hatch into L1 larvae.

Intermediate Hosts

Snails and slugs eat the infected feces. The L1 molts twice to produce L3 larvae. The L3 are embedded in snail tissue or excreted in slime.

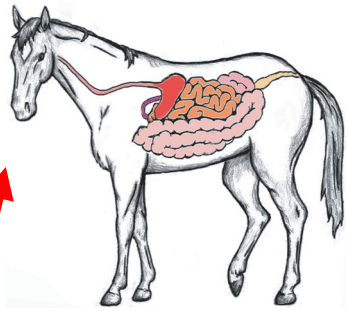


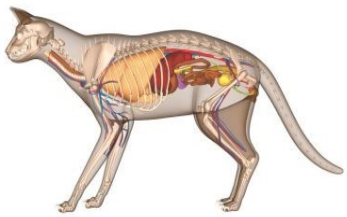
Paratenic Hosts

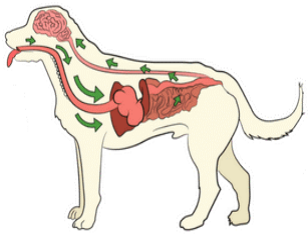
L3 larvae ingested by paratenic hosts survive and remain infectious but do not mature into worms. Paratenic hosts include frogs, crabs, lizards, planarians, and some fish.

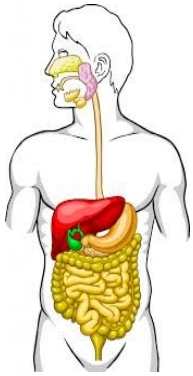
Accidental Hosts*

are infected by ingesting snails/ slugs or L3 larvae in paratenic hosts, on food or in liquids. L3 penetrate intestines in accidental hosts, move through the blood stream to the spine and brain and molt to L4 and L5 (mature worms) and cause eosinophilic meningitis. Accidental hosts (aka dead end hosts) include humans, dogs, cats and horses.*









*Accidental hosts: Numerous other animals have also become infected; including pigs, calves, some birds, alpacas, and many marsupial mammals.

The life cycle of *Angiostrongylus cantonensis*. As **definitive hosts,** rats acquire third stage larvae by ingesting infected **intermediate hosts,** aquatic or terrestrial snails and slugs. Larvae penetrate the stomach, enter the hepatic portal and mesenteric lymphatic systems and are carried to the heart and lungs. They enter alveoli, invade the pulmonary veins, are returned to the left heart and distributed around the body by the arterial circulation. Larvae reach the CNS, predominantly the cerebrum and cerebellum, grow and molt twice in the parenchyma and young adults invade the subarachnoid space of the brain. After about two weeks they invade the cerebral vein and move to the heart and pulmonary arteries where they mature. Eggs are carried in the blood to the lungs where they embryonate. First-stage larvae escape up the bronchial escalator, are swallowed, pass out in the feces, are ingested by **intermediate hosts,** snails and slugs, and develop to third-stage infective larvae. A broad spectrum of animals – planarians, prawns, crabs, frogs and lizards may serve as **paratenic hosts** in which infective larvae reside but undergo no further development. Humans and many other animals (e.g. alpaca, armadillos, possums, marsupials, and several birds) are **accidental hosts** and infection may occur through ingestion of **intermediate** or **paratenic** hosts, the latter often eaten raw or their juices used in preparation of local dishes. Infective larvae may also leave molluscs and contaminate vegetables such as lettuce.

Image adapted from Wang, et al 2012. Eur J Microbial Infection Dis. // Caption adapted from Spratt, Species of Angiostrongylus in wildlife: A review, 2015.