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HAWAII



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**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

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**Testimony of  
SUZANNE D. CASE  
Chairperson**

**Before the Senate Committee on  
WAYS AND MEANS**

**Wednesday, February 21, 2018  
10:10 AM  
State Capitol, Conference Room 211**

**In consideration of  
SENATE BILL 3097, SENATE DRAFT 1  
RELATING TO THE UNIVERSITY OF HAWAII**

Senate Bill 3097, Senate Draft 1, proposes to appropriate funds to the University of Hawaii at Hilo for research related to the control and prevention of rat lungworm disease. **The Department of Land and Natural Resources (Department) supports this bill, provided that its passage does not replace or adversely impact priorities indicated in the Executive Supplemental Budget request.**

The Department is a collaborator on biosecurity issues with the University of Hawaii and the Hawaii Department of Health, as described in the Hawaii Interagency Biosecurity Plan. Rat lungworm disease is recognized in the Biosecurity Plan as a serious threat to human health and agriculture in Hawaii, vectored by invasive snails and rodents. While the Hawaii Invasive Species Council (HISC), which is administered by the Department, has received funding requests from the University of Hawaii at Hilo to conduct research and education on this important issue, sufficient funding has not been available via HISC to support the broad level of education, research, and control activities needed to mitigate this threat.

Thank you for the opportunity to comment on this measure.



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented Before the  
Committee on Senate Ways and Means  
February 21, 2018 at 10:10 a.m.

By  
Carolyn Ma, PharmD, BCOP  
DEAN  
UH Hilo - Daniel K. Inouye College of Pharmacy

### SB 3097 SD1 – RELATING TO THE UNIVERSITY OF HAWAII

Chair Dela Cruz, Vice Chair Keith-Agaran, and members of the committee:

My name is Carolyn Ma, and I am the Dean for the UH Hilo Daniel K. Inouye College of Pharmacy (DKICP). As the designated lead for University of Hawai'i at Hilo on behalf of Interim Chancellor Dr. Marcia Sakai, UH Hilo fully supports the intent of this bill that will address the control and treatment of Rat Lung Worm (RLW) Disease.

UH Hilo's DKICP has both a basic science researcher Sue Jarvi, PhD (RLW Task Force) and a pharmacy practice (pharmacist) faculty, Louis Leteif, PharmD on the RLW Clinical Management Subcommittee.

A most recent study (in publication) has shown that Hawai'i Island has the highest *Angiostrongylus cantonensis* infection rates in rats (94%) and in mollusks (*Parmarion martensi*, semi-slugs 77%) in the country and the increase in human infection appears linked to the arrival of semi-slugs. A baseline recent study conducted on Kaua'i, between March-May 2017 and tested for the presence of *Angiostrongylus cantonensis* (Rat Lungworm), of which 17.2% of semi-slugs tested positive. Our basic science researcher has been active in conducting valuable research.

1. Jarvi lab has developed a 'death assay' to distinguish live from dead larvae. Continued study in this area will help complete studies determine how effective commercially available vegetable washes or other solutions are at killing infective RLW larvae.
2. Simulated catchment water systems have been initially conducted to test two different size filters in an attempt to filter out infective larvae. However, tests have shown that larvae can still travel or move around certain size filters. Continued evaluation of the possibility of RLW transmission in water is necessary by conducting laboratory and household catchment studies to optimize maintenance and treatment design that prevents RLW larvae entering household and agricultural water supplies.

3. A pilot study has been completed to determine if a blood-based test can help to diagnose RLW, rather than the current diagnosed procedure of a spinal tap. Continued study of protein isolates from infected rats will help to evaluate the reliability and validity of such a test.
4. The lab continues to develop ways of reducing larval burdens in rats. Vaccination study was unsuccessful under given conditions. Further study in possibly deworming rats may be a more appropriate strategy.
5. Dr. Louis Leteif has been working on the RLW Task Force Subcommittee for Clinical Management and his work has been to formulate clinical treatment guidelines. These guidelines will guide physicians who are treating these patients with best practice methods of diagnosis (3D MRI, spinal tap, blood tests), effective treatment options, monitoring and follow up. In order to create these guidelines, Dr. Leteif and assistance must review the over 80 cases of RLW that have occurred in the state. Funding would help to continue this investigation. Results would also be applicable to how to treat this disease in domesticated animals and farm livestock.

Thank you for allowing me to testify on behalf of UH Hilo. We support this bill if the passage does not replace or adversely impact priorities as indicated in our University of Hawai'i BOR Approved Supplemental Budget.

Estimated Costs for RLW Research (Bench and Clinical Management) - 3yrs Budget, DKICP		2018-2019		2019-2020		2020-2021	
		FTE	Base \$	Fringe \$ (50.79%)	Base \$	Fringe \$ (50.79%)	Base \$
<b>Salaries:</b>							
Lab manager (Jarvi Lab)	1.0	55,000	27,935	56,650	27,773	58,350	29,636
Research Assistant (Jarvi Lab)	1.0	42,120	19,503	43,384	20,088	44,685	20,691
Research Assistant (Jarvi Lab)	1.0	42,120	19,503	43,384	20,088	44,685	20,691
Clinical Management Resesarcher to develop Treatment Guidelines (Dept. of Pharmacy Practice, Dr. Louis Lteif)	1.0	52,000	26,411	53,560	27,203	55,167	28,019
Research Assistant (Clinical Management Research portion for Dr. Louis Lteif)	0.5	25,000	12,500	25,000	12,500	25,000	12,500
		216,240	105,852	196,978	95,152	202,887	99,037
<b>Total salaries</b>		\$322,092		\$292,130		\$301,924	
<b>Supplies, travel, other:</b>							
PhD students (including anti-parasitic drug study)		10,000		10,000		10,000	
Veggie wash study		5,000					
Diagnostic study supplies and travel (human and domestic animals)		20,000		20,000		20,000	
Catchment study		10,000		10,000		10,000	
Rat deworming study (supplies and personnel to care for rats)		100,000					
Travel for Clinical Management Researcher		5,000		5,000		5,000	
<b>Total Supplies, Travel, Misc.</b>		150,000		45,000		45,000	
<b>Total Apportionment Proposed</b>		<b>\$472,092.00</b>		<b>\$337,130.00</b>		<b>\$346,924.00</b>	
25% of apportionment to Clinical Treatment Guidelines Research							

Harry Kim  
Mayor



Wil Okabe  
Managing Director

Barbara J. Kossow  
Deputy Managing Director

County of Hawai'i  
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February 20, 2018

Senator Donovan M. Dela Cruz, Chair  
Committee on Ways and Means  
Hawai'i State Capitol, Room 211  
Honolulu, HI 96813

Senator Gilbert S.C. Keith-Agaran, Vice Chair  
Committee on Ways and Means  
Hawai'i State Capitol, Room 211  
Honolulu, HI 96813

Dear Chair Dela Cruz, Vice-Chair Keith-Agaran and Committee Members:

**Re: SB 3097, SD 1 Relating to Rat Lungworm Disease**  
**Hearing Date: 02/21/18 – 10:10 am; Conference Room 211**

Thank you for this opportunity to testify in support of funding for activities aimed at the control and prevention of rat lungworm disease. While those worthy goals are pursued, a third aim could also be better treatment for those who fall victim to this illness.

The Daniel K. Inouye College of Pharmacy at the University of Hawai'i at Hilo established the Hawai'i Island rat lungworm disease working group. It has been conducting research and educational outreach on the disease for the past four years, and it is my understanding that it has been doing very valuable work.

Apparently the impact of this disease has been different in Hawai'i than on the mainland, with unusually severe consequences reported for Hawai'i victims. Therefore, the funding of local research is uniquely important.

Please support SB 3097, SD 1

Respectfully submitted,

Harry Kim  
Mayor, County of Hawai'i

