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MEETING NOTICE

University of Hawaii at Manoa
St. John 307

10a, Wednesday
December 4, 2019

Research & Technology Working Group
of the
Hawaii Invasive Species Council

AGENDA

1. **Call to order:** *by Chair, Mike Melzer (PEPS) at 10:10a*
2. **Introductions:**
 - a. **On-line:** *Chuck Chimera (HPWRA), Springer Kaye (BIISC), Sheina Sim (USDA ARS), Scott Geib (USDA ARS)*
 - b. **In-person:** *Mike Melzer (PEPS), Paul Krushelnycky (UH-CTAHR), Randy Bartlett (HISC), Chelsea Arnott (HISC), Zhiqiang Cheng (PEPS), Conrad Gillett (PEPS)*
3. **Announcements:** *Notes from last meeting approved. No comments.*
 - a. **Review past meeting notes at:**
<http://dlnr.hawaii.gov/hisc/meetings/wg/research/>

4. Action Items: (see table & **hi-lighted** items below)

a. HIBP Progress Updates:

1. PrePro1.2: Risk Assessments
2. BorPro2.4: Biofouling Technologies
3. PosTifs1.13: Extension Agents/Specialist/Researcher
 - a. Chelsea Arnott: HISC working with Dean of CTAHR for a bill to get an extension agent for agriculture.
 - b. Mike Melzer: New Hires: Researcher and Specialists. 3 positions within PEPS. Replacement for ornamental extension agent in Hilo - might transition into a forest pathologist and split the PD for that. Currently advertised. Retirements for Dr. Uchida and Hirata? Entomology position (Gordon's position for vector is the highest priority).
4. PosTifs1.14: Agriculture Diagnosticians
5. PwsPro3.8: UH Biosecurity Instruction
6. PwsTifs1.7: UH Biosecurity Instructor/Researcher

5. New Business:

a. ***Acalolepta aesthetica*** (Queensland long-horned beetle aka QLB)

[Cerambycidae] Research Needs:

- i. Springer Kaye: Background from Springer. Detected in 2009 in Puna. Wasn't immediately acted on because not seen as a pest elsewhere in the world. Started seeing cacao damage and raised the alarm and identified the species. Species is known to attack healthy trees not just already infected trees. Very little information about this pest. Seems to be attacking trees that are soft wooded (hibiscus (not confirmed; only because cacao belongs to Malvaceae family), kukui, sago palms, all citrus, breadfruit, mango, cacao, Norfolk pine (gunpowder and avocado are unknown??))
 1. Springer: Hope is to start an organized working group to get the right research and develop a punch-list of things that need to be done. Suggests doing this through the R&T working group.

- ii.** *Mike Melzer: Is there evidence of it attacking live wood?*

 - 1. *Shiena Sim - the Cacao farmers showed healthy living trees that have been attacked repeatedly and there is first hand evidence of it attacking citrus.*
- iii.** *Springer: Key needs - Need a researcher to properly document the evidence.*

 - 1. *Mike: I think it would just be photos of the bored holes with sap coming out. Photo documentation is all that would be needed. In 6 months a statewide survey for all the long horned beetles funded by USDA to understand the extent but not really looking at control.*
 - 2. *Shiena: When it's in the larval state it is really difficult to differentiate between the various long-horns. We need to get the identification down, that's a priority.*
 - 3. *Mike: There has to be some type of morphology that we can use for identification.*
 - 4. *Sheina: We receive a lot of longhorn beetles that get turned in but the larval stage is hard to determine but no other adults get as large as this one. We're developing diagnostic tools for this and we're sequencing them to understand the genetic diversity amongst the species but also amongst other long-horn beetle. Would be nice to get more molecular state from conrad. We need that molecular data to compare it to. What are the findings so far? They are very different from the ones we've found between species. Within the species there's some variability but still undetermined if it came from a single introduction.*
- iv.** *Mike: Is a molecular tool satisfactory for identification or do we need a field tool (using frass, eggs)? How difficult it is to extract larvae from holes?*

1. *Sheina/Scott Geib: Not hard at all. A farmer uses a crochet hook and is able to pull them out. You may damage the tree in the process of extracting that could further damage the trees. Using the frass would be a better way to do identification than we would have less damage to the trees.*
- v. *Zhiquang Cheng: Hibiscus and ornamental palms maybe hosts as well. Have you found any evidence of this?*
 1. *Sheina: Just in Sago palms, so far.*
- vi. *Mike: Other than ID, management tools would be the next thing needed.*
- vii. *Sheina: Meeting with Eli ?, UH Asst. Extension Agent for Sustainable Agriculture. Leaving for Missouri soon. Handles the Master Gardeners program in Hilo. There is a masters student, Blake Miles, who wants to do his thesis on QLB. Looking into the demography. Mike will get in touch because it's very likely he will receive funding for this species.*
- viii. *Cheng: How is building out a colony going for this?*
 1. *Sheina: Not sure how that is going. They weren't lent a female but that's all.*
 2. *Scott: Did my thesis on Asian Longhorn Beetle so is familiar with how to rear and will be reaching out to some colleagues. Need a rearing colony of hundreds of individuals for this type of research.*
- ix. *Mike: Which cacao growers being impacted?*
 1. *Sheina/Scott: The organic ones. Imidacloprid - AdmirePro; is a good control but not for organic farmers. Developed a survey that they're going to send out to the farmers that look at what they're growing, what's being damaged, by what, and how are the treating. We have the whole genome sequenced. Ag 100 pest initiative allowed for high quality sequencing with USDA. Will have the whole*

mitochondrial genome sequenced. CRB was also sequenced through the same program. **ACTION - Scott can send that data to the group or to Mike.** Started with big things and now looking at other species. If you have the transcriptome you can send it to Mike's lab. Only have sequence two males and females. Have to sequence the larvae. Let Mike's lab know how they can help. They like to target the larvae because there's more information.

- x. Conrad Gillett: Has the species in HI been positively ID'd, since in AUS there are about 300 different species?
 - 1. Mike: Has it been sent/ID'd by SCL in Maryland?
 - 2. Sheina/Scott: Darcy Oishi at HDOA would know.
 - 3. Discussion re common name in question. There's already one document that records the beetle as the Queensland Longhorn Beetle. Scott started calling the cacao borer that really confused people. Either call it by the main host its attacking or where its from. Need to formalize the name.
- xi. Springer: If folks could think about the 5 objectives sent out and determine who would best work on those?
 - 1. LifeCycle, Potential Hosts, Biology:
 - 2. Economic Impacts:
 - 3. Recommendations for Early Detection, Control, IPM:
 - 4. Outreach Strategy:
 - 5. Establish common name: Queensland Longhorn Beetle/QLB?
- xii. Mike: Cheng, if we can get a sample into the lab, can you test the effectiveness of different agents (fungal or chemical) on them?
 - 1. Cheng: Sure.
- xiii. Scott/Sheina: We have testing capacity in our lab, if we had funding for a position to do the work. Dong Chow?
- xiv. Springer: Would it be possible to send QLB to the OTIS lab in MASS to do some testing?

1. *Mike: Possibly. Depends on funding, etc. Will ask them and see if they're willing.*

xv. *Sheina: Adults are most active in the spring and summer. Another topic is understanding its phenology.*

1. *Conrad: There are 3 different native Cerambycidae that are related that are being reared to develop a pheromone lure for conservation needs. That information could help find lurers for the QLB. Native species are typically found quite high because that's where native forest is. But they have been known low down which is where they found the one on tree tobacco. There's at least one species that lives in `ohi`a.*
2. *Mike: Need to discuss with HDOA if we can get live specimens and rear them hear in Manoa. Mike's lab might be able to set up space to rear if they're permitted.*
3. *Paul Krushelnycky: There's a koa longhorn beetle.*

xvi. *Mike: What else? Suggestion putting a package together that definitely highlights why APHIS should care, especially if it's impacting citrus. That will help open up funding streams. Having this package with APHIS prepped would be good in preparation for requests for the next year of Farm Bill funding. If it impacts the citrus industry than that's a good candidate for funding. Statewide surveys will start in June and that information would be helpful to have even if it's just preliminary. That will help prep APHIS.*

1. *Springer: Senator Brian Schatz wrote a letter to Ag. Secretary, Sunny Purdue, asking for help on this pest. Purdue wrote back that ARS is working on it and HI can seek funding, but never saw any request for funding.*

xvii. *Cheng/Mike: Stacy at HDOA Hilo is rearing some QLB.*

xviii. *Chuck Chimera: As far as practical on-the-ground management considerations/actions - are there any recommendations for control or IPM at the moment?*

1. *Cheng: It depends on the crop. The pesticides are only labeled for ornamental and not crops.*
2. *Springer: Destroying the tree is recommended in by HDOA but they don't say how to destroy. **Group agrees Recommended to cut and chip.***

b. **Strategic Environmental Research and Development Program/SERDP**

request for applications targeting invasive species. Pre-proposals due Jan 7 by 2p ET.

- i. *Mike: Anyone considering submitting a proposal? \$900k*
- ii. *Paul: Put in a smaller proposal but they ended funding large projects. An example is a seed dispersal project of non-native trees.*
- iii. *Mike: just wants to alert people that that funding opportunity is there and the person in charge is really approachable. There are some folks on campus that have gone through this process. If you have any good ideas - put them out there. **ACTION - Mike needs to think about ideas. Will put notice out to faculty.** Right now thinking CRB but also could have a broader topic that includes CRB as a component.*
- iv. *Paul: my take is that scope is very narrow but need to take another look at it.*
- v. *Mike: need to talk directly to the person in charge of the RFP. Should meet up soon so we can figure out something to put together because it's a good chunk of money.*

6. **Old Business (Project Updates):**

a. **Biocontrol:** *Tracy Johnson: Chelsea read from spreadsheet Tracy and Darcy put together for updates on the species below:*

- i. **Melastomes:** *Miconia explorations complete. Nematode difficult to rear in Volcano and at HDOA in Honolulu. Miconia butterfly moving along.*
- ii. **Himalayan Ginger:** *Shoot-mining fly. Multiple challenges. Indian government changing permit regulations.*

- iii. **Albizia:** *Exploratory work completed. Working in Indonesia on two pests. No greenhouse space to grow mature Albizia.*

b. CRB:

- i. *Michael Melzer:*

- 1. *Canine detector teams in the field.*
- 2. *Vacuum-steam unit ready to deploy once boiler inspection is complete.*
- 3. *RNAi work continuing. Bringing in bacteria for delivery & trunk injections.*
- 4. *Working on chem control for grubs.*
 - a. *Triple Crown*

- ii. *Zhiqiang Cheng:*

- 1. *Chemical & Mechanical control:*
 - a. *USDA Farm Bill funding.*
 - b. *Dinotefuran*
 - c. *Imidachloprid*
 - d. *Acephate*
 - e. *Abamectin*
- 2. *Biological Controls:*
 - a. *Metarhizium - 40-50% mortality. Looking to be a good addition for IPM.*
 - b. ***ACTION - Send Mike updated list of HISC funded research projects.***

c. LFA:

- i. *Cas Vanderwoude/Michelle Montgomery: N/A*

- 1. **LFA update:**

- ii. *Paul Krushelnycky:*

- 1. **Hydrogel Ant Baits:**

- a. *Argentine ant trials at HALE-NP w/three chemicals:*
 - i. *ProVaunt (indoxacarb): Still getting good results.*

- ii. *Optiguard (thiamethoxam): Did not work as well as anticipated. Investigating the reasons of why it did not work well.*
- iii. *Safari (dinotefuran): Tested to see if the hydrogel formulation gets uptaken by plants.*

d. HBT: James Leary/Dan Jenkins: N/A

i. Miconia:

ii. Albizia:

e. Rat Lungworm:

i. Norine Yeung: N/A

ii. Chris Niebuhr: N/A

f. Mongooses: Shane Siers: N/A

g. Spittlebug: Mark Thorne: N/A

7. Comments: *Please feel free to leave any relevant comments below for consideration by the R&TWG:*

- a. *Chelsea: Will be sending out a survey just to get an assessment of the working groups. What's working and what needs improvement. Also integrating the strategic plan key actions into working groups.*

8. Next Meeting: FY20 Q3 TBD

- a. *Control Working Group Meeting on Tuesday, December 10, 2019, 2p, Kalanimoku Building, Rm. 325 (DOFAW Conference Room).*
- b. *Prevention Working Group Meeting on Wednesday, December 11, 10a, HDOA Plant Quarantine Branch Conference Room*
- c. *Outreach Working Group Meeting on Thursday, December 12, 10a, Kalanimoku Building, Rm. 325 (DOFAW Conference Room).*

9. Adjournment: 11:47a

Online Participation Instructions:

Wednesday, December 4, 2019 | 10am Hawaii Time (GMT-10:00) | 2 hours

Join Zoom Meeting

<https://zoom.us/j/856651926>

Meeting ID: 856 651 926

One tap mobile

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Find your local number: <https://zoom.us/u/aeHilFfmKm>

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R&T Working Group Action Items Tracking			
Date Started	Action Item	Personnel	Status
3/9/18	Josh will contact toxicologists to see if they would work with James on a position paper about glyphosate. Would be a review of the Cal-IPC paper to see if they're comfortable with it, then the HI product would be a	Josh	In progress

	simple statement on the value of glyphosate in management in Hawaii. 6/22: Monsanto bought by Syngenta and will no longer be a brand-name. Need for talking points re facts on pesticide use, etc. - Josh to search thru bills at the beginning of next Legislative session for related red flag language. - Begin process to create white-paper on specific chemicals; including environmental fate & health issues/toxicology.		
3/9/18	PrePro1.2: Risk Assessments What assistance can R&T WG provide to HDOA on conducting risk assessments (a major component of the HIBP)? ACTION: Josh to approach HDOA and ask what data they need help with, rather than us running with it and then presenting the results later. When HDOA and researchers are talking to one another about the types of assessments that need to be done, we can turn that into funding proposals to get the work done. 6/22: Josh asked HDOA. They're fine for now. Will be gathering data via their new e-manifest system to be online by the end of the year. Need to ask at next Prevention WG meeting re need for data analyst.	Josh	Completed
3/9/18	BorPro2.4: Biofouling technologies Working on this. HISC Reso 18-1, resos in 2018 legislature. ACTION: Jules working on Hawaii joining the Alliance for Coastal Technologies evaluations of technology. 6/22: HISC resolution passed. Christy Martin worked on a House Concurrent Resolution 130 which passed in the 2018 Legislative session.	Jules	In progress

	11/9: Christy Martin & Jules Kuo went to CA to observe & learn about existing & new technologies.		
3/9/18	PosTifs1.13 & 1.14, PwsPro3.8, PwsTifs1.7: CTAHR extension agents and faculty that teach invasives/biosecurity issues 11/9: Mike Melzer: In dire need of Ag. Diagnosticians (lost Scott Nelson, Plant Pathology). James Leary: Need to maintain a Weed Science capacity after that guy Leary leaves. Need to emphasize CTAHR's position in the Biosecurity scheme of things as a whole with Kelvin Sewake. Need to invest in a Forest Pathologist to respond to future ROD-like outbreaks. <i>ACTION: Dean Comerford is prioritizing new positions now. Diagnostics is high on this list. Support for these hires from CTAHR staff on the call. HISC staff relayed the interest in these positions in their initial meeting with Dean Comerford.</i> 6/22: New extension agent on Kaua'i (entomologist) Roshan Manandhar 7/23: Hired new director of Diagnostics Services Center: Scott ?	Mike/Josh	In progress