# 2023 AMERICAN HONEY PRODUCERS CONVENTION

# ABOUT THE ASSOCIATION:

The American Honey Producers Association (AHPA) is an organization with over 550 members that are people just like you—

beekeepers making their living from the production of honey.

The AHPA is dedicated to promoting the common interest and general welfare of every American honey producer. From the backyard beekeeper to large commercial beekeeping, whether you run 1 to 2 hives or 80,000 hives, the AHPA pledges to work to improve the future of beekeeping for all.


**HONEY LABELING**

THE AHPA WORKS TO ENSURE THAT HONEY LABELING IS ACCURATE AND NOT DECEPTIVE. FOR EXAMPLE, THEY LOBBIED CONGRESS TO REQUIRE THE TESTING OF IMPORTED HONEY, WHICH HAS HAD AN IMPACT ON THE VOLUME OF IMPORTED HONEY AND PRICES.

**DISASTER ASSISTANCE**

THE AHPA'S NON-INSURABLE CROP ASSISTANCE PROGRAM (NAP) PROVIDES FINANCIAL AID TO BEEKEEPERS WHO EXPERIENCE NATURAL DISASTERS THAT CAUSE LOW YIELDS, INVENTORY LOSS, OR PREVENTED PLANTING.

**OTHER ISSUES**

THE AHPA ALSO WORKS ON ISSUES LIKE ANTI-DUMPING, ADULTERATION, PESTICIDE ISSUES, AND FUNDING FOR BEE RESEARCH LABS.

# American Honey Producers Association

## 55th Annual Conference & Trade Show

San Diego

Marriott Mission Valley

December 4 - 7, 2023

# American Honey Producers Association

## 55th Conference & Trade Show

Registration open: December 4, 12:00 pm - 4:00 pm
December 5, 8:00 am - 4:00 pm
December 6, 8:00 am- 1:00 pm
December 7, 8:00 am - 12:00 pm

Trade Show open daily 8:00 am - 5:00 pm, Rio Vista E - H

### Monday, December 4

*subject to change

| | |
|---|---|
| 8:00 am - 10:00 am | **Executive Board Meeting**<br>Sante Fe 4 |
| 10:00 am - 11:00 am | **Golf Registration** |
| 11:00 am - 4:00 pm | **Golf Tournament** |
| 6:00 pm - 10:00 pm | **Welcome Reception**<br>Rio Vista E - H and Foyer |

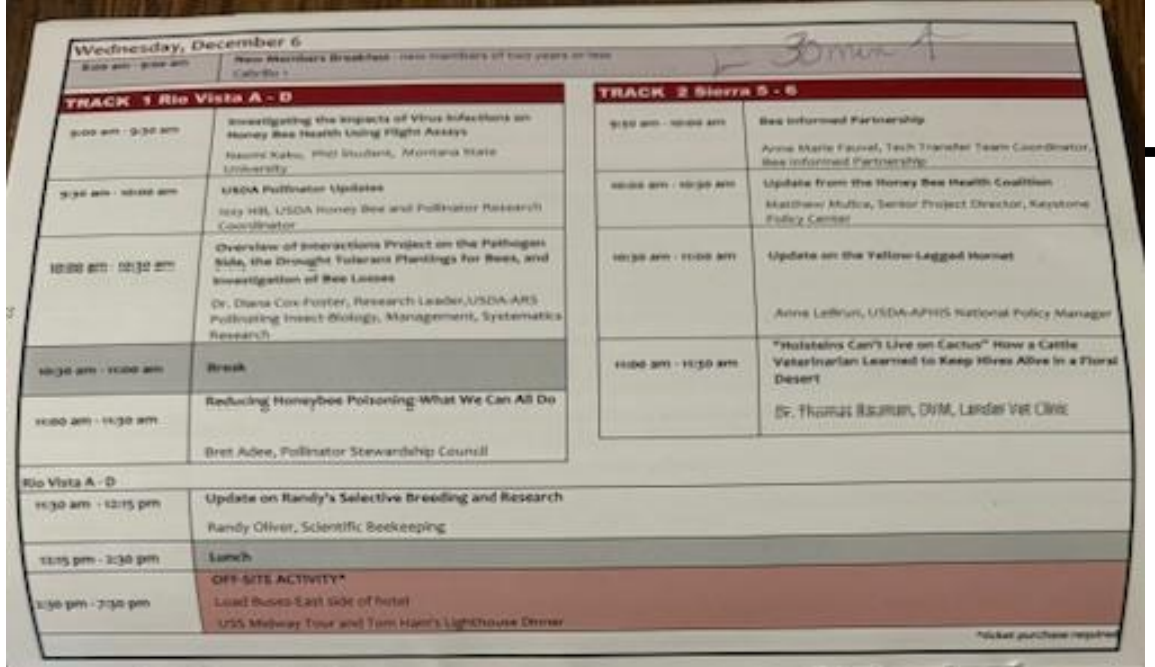
### Tuesday, December 5

Rio Vista A - D

| | |
|---|---|
| 9:00 am | **Call to Order, Flag Salute, Prayer**<br>Chris Hiatt, President, AHPA |
| 9:05 am | **President's Address**<br>Chris Hiatt, President, AHPA |
| 9:15am | **Committee Assignments**<br>Chris Hiatt, President, AHPA |
| 9:20 am | **Election Results & Seating of Board of Directors**<br>Steven Coy, Vice President, AHPA |

### cont'd Tuesday, December 5

| | |
|---|---|
| 9:30 am - 10:15 am | **Lets Not Be Bashful**<br>**Keynote Speaker:** Jerry Hayes, Editor, Bee Culture Magazine |
| 10:15 am - 10:45 am | **Tropilaelaps Management: Combining Cultural and Chemical Methods**<br>Dr. Geoff Williams, Associate Professor, Auburn University |
| 10:45 am - 11:00 am | **Break** |
| 11:00 am - 11:30 am | **Are Canadian-USA Stock and Bee Health Issues Aligned**<br>Rod Scarlett, Executive Director, Canadian Honey Council |
| 11:30 am - 12:00 pm | **Lessons Learned from Five Years of Research on Amitraz Resistance in Varroa**<br>Dr. Frank Rinkevich, USDA-ARS Honey Bee Breeding, Genetics, and Physiology Research |
| 12:00 pm - 1:30 pm | **Lunch** |
| 1:30 pm - 2:00 pm | **Economic Contributions of Tallow to Beekeeping and the Broader Economy**<br>Dr. Dan Sumner, Professor of Agriculture and Resource Economics, UC Davis, Chair of UC Giannini Foundation of Agriculture Economics |
| 2:00 pm - 2:30 pm | **What Causes Poor Drones?**<br>Garett Slater, Postdoc USDA-ARS Baton Rouge Bee Lab |
| 2:30 pm - 3:00 pm | **Legislative/Farm Bill Update**<br>Eric Silva, Federal Policy Advisor, NorthSouth Government Strategies & Chris Hiatt, President, AHPA |
| 3:00 pm - 3:30 pm | **Break** |
| 3:30 pm - 4:00 pm | **How Toxicological Assessments Can Generate New Tools for Honey Bee Management and Varroa Control**<br>Julia D. Fine, Ph.D., Research Entomologist, USDA/ARS/Pollinator Health Lab |
| 4:00 pm - 4:30 pm | **Packages Information Canada Panel Discussion**<br>Jackie Parks-Burris, Charles Linder, Buzz Landon and Wes Card |
| 4:30 pm - 5:00 pm | **Training Active Duty, Veteran and Afghan Beekeepers, Valor Honey**<br>Gary Lagrange, Colonel, US Army Retired, Executive Director, Chairman, Founder, Valor Honey |


Wednesday, December 6

TRACK 1 Rio Vista A - D

| | |
|---|---|
| 9:00 am - 9:30 am | Investigating the Impacts of Virus Infections on Honey Bee Health Using Flight Assays<br>Naomi Kaku, PhD Student, Montana State University |
| 9:30 am - 10:00 am | USDA Pollinator Updates<br>Jessy Hill, USDA Honey Bee and Pollinator Research Coordinator |
| 10:00 am - 10:30 am | Overview of Interactions Project on the Pathogen Side, the Drought Tolerant Plantings for Bees, and Investigation of Bee Losses<br>Dr. Diana Cox-Foster, Research Leader, USDA-ARS Pollinating Insect-Biology, Management, Systematics Research |
| 10:30 am - 11:00 am | Break |
| 11:00 am - 11:30 am | Reducing HoneyBee Poisoning-What We Can All Do<br>Bret Adee, Pollinator Stewardship Council |

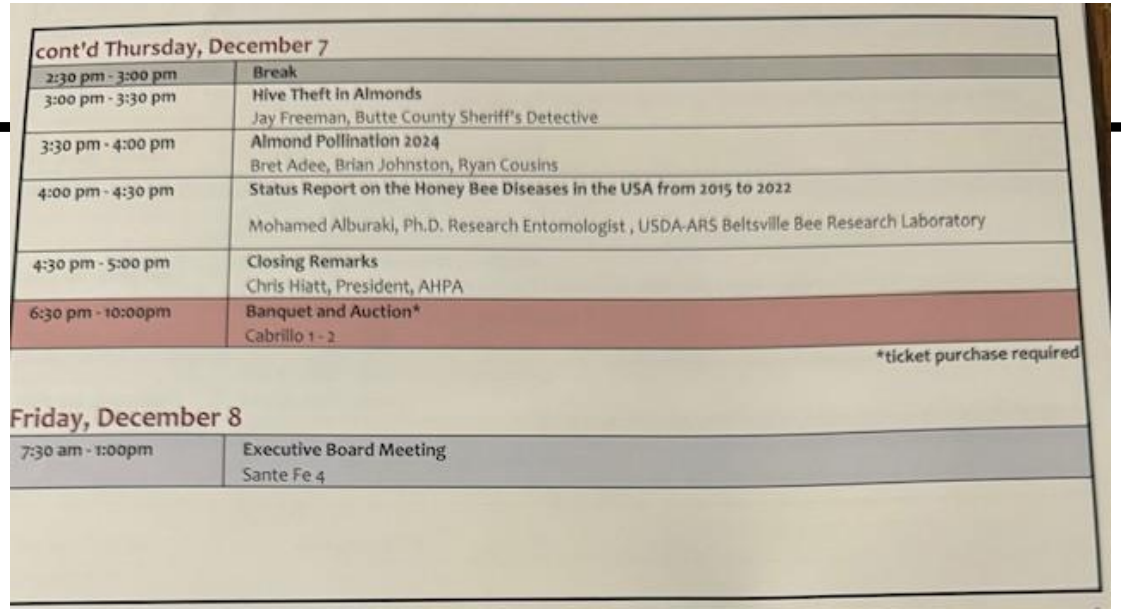
TRACK 2 Sierra 5 - 6

| | |
|---|---|
| 9:30 am - 10:00 am | Bee Informed Partnership<br>Anne Marie Fauvel, Tech Transfer Team Coordinator, Bee Informed Partnership |
| 10:00 am - 10:30 am | Update from the Honey Bee Health Coalition<br>Matthew Mutka, Senior Project Director, Keystone Policy Center |
| 10:30 am - 11:00 am | Update on the Yellow-Legged Hornet<br>Anne Lefrun, USDA-APHIS National Policy Manager |
| 11:00 am - 11:30 am | "Holsteins Can't Live on Cactus" How a Cattle Veterinarian Learned to Keep Hives Alive in a Floral Desert<br>Dr. Thomas Rauman, DVM, Lander Vet Clinic |

Rio Vista A - D

| | |
|---|---|
| 11:30 am - 12:15 pm | Update on Randy's Selective Breeding and Research<br>Randy Oliver, Scientific Beekeeping |
| 12:15 pm - 2:30 pm | Lunch |
| 1:30 pm - 7:30 pm | OFF-SITE ACTIVITY*<br>Load Buses-East side of hotel<br>USS Midway Tour and Tom Ham's Lighthouse Dinner |

*ticket purchase required

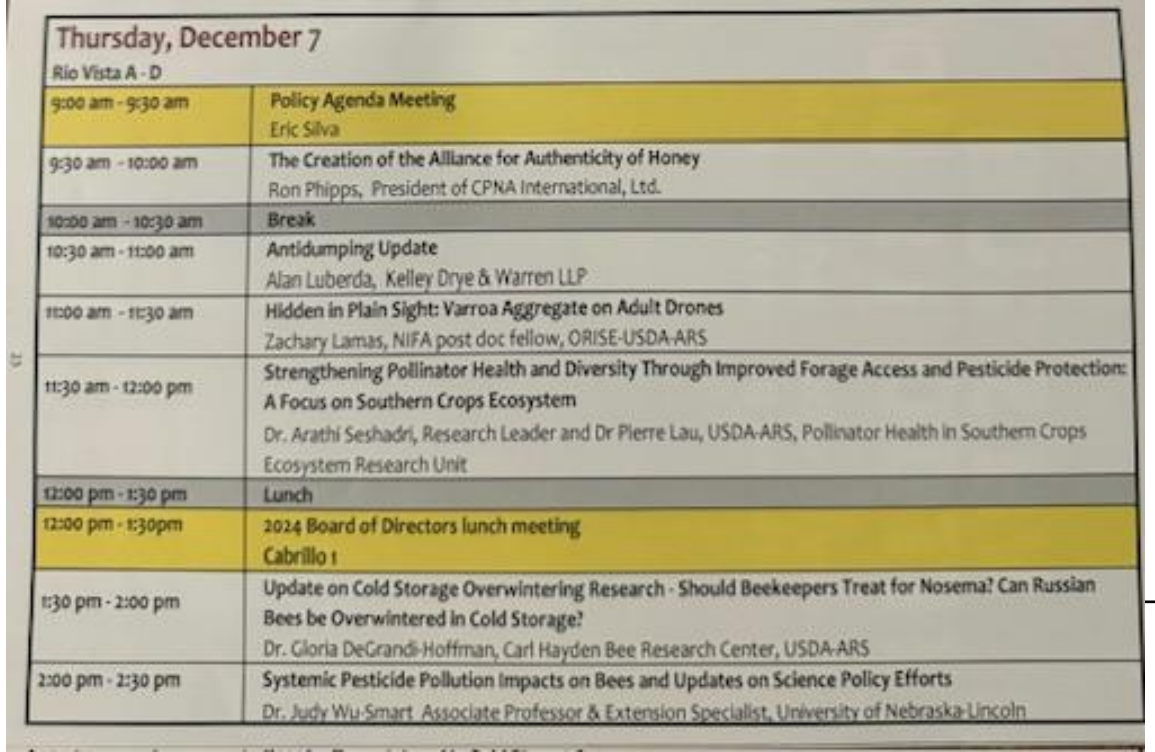

cont'd Thursday, December 7

| | |
|---|---|
| 2:30 pm - 3:00 pm | Break |
| 3:00 pm - 3:30 pm | Hive Theft in Almonds<br>Jay Freeman, Butte County Sheriff's Detective |
| 3:30 pm - 4:00 pm | Almond Pollination 2024<br>Bret Adee, Brian Johnston, Ryan Cousins |
| 4:00 pm - 4:30 pm | Status Report on the Honey Bee Diseases in the USA from 2015 to 2022<br>Mohamed Alburaki, Ph.D. Research Entomologist , USDA-ARS Beltsville Bee Research Laboratory |
| 4:30 pm - 5:00 pm | Closing Remarks<br>Chris Hiatt, President, AHPA |
| 6:30 pm - 10:00pm | Banquet and Auction*<br>Cabrillo 1 - 2 |

*ticket purchase required

Friday, December 8

| | |
|---|---|
| 7:30 am - 1:00pm | Executive Board Meeting<br>Sante Fe 4 |


Thursday, December 7

Rio Vista A - D

| | |
|---|---|
| 9:00 am - 9:30 am | Policy Agenda Meeting<br>Eric Silva |
| 9:30 am - 10:00 am | The Creation of the Alliance for Authenticity of Honey<br>Ron Phipps, President of CPNA International, Ltd. |
| 10:00 am - 10:30 am | Break |
| 10:30 am - 11:00 am | Antidumping Update<br>Alan Luberda, Kelley Drye & Warren LLP |
| 11:00 am - 11:30 am | Hidden in Plain Sight: Varroa Aggregate on Adult Drones<br>Zachary Lamas, NIFA post doc fellow, ORISE-USDA-ARS |
| 11:30 am - 12:00 pm | Strengthening Pollinator Health and Diversity Through Improved Forage Access and Pesticide Protection: A Focus on Southern Crops Ecosystem<br>Dr. Arathi Seshadri, Research Leader and Dr Pierre Lau, USDA-ARS, Pollinator Health in Southern Crops Ecosystem Research Unit |
| 12:00 pm - 1:30 pm | Lunch |
| 12:00 pm - 1:30pm | 2024 Board of Directors lunch meeting<br>Cabrillo 1 |
| 1:30 pm - 2:00 pm | Update on Cold Storage Overwintering Research - Should Beekeepers Treat for Nosema? Can Russian Bees be Overwintered in Cold Storage?<br>Dr. Gloria DeGrandi-Hoffman, Carl Hayden Bee Research Center, USDA-ARS |
| 2:00 pm - 2:30 pm | Systemic Pesticide Pollution Impacts on Bees and Updates on Science Policy Efforts<br>Dr. Judy Wu-Smart Associate Professor & Extension Specialist, University of Nebraska-Lincoln |

Tropilaelaps Management – Dr. Geoff Williams

Investigating Impacts of Virus Infections on Honey Bee Health Using Flight Assays – Naomi Kaku

Overview of Interactions Project on the Pathogen side, the Drought Tolerant Plantings for Bees, and Investigation of Bee Losses – Dr. Diana Cox-Foster

Update on Randy's Selective Breeding & Research – Randy Oliver (AHPA Beekeeper of the Year Award Winner)

Dr. Joc Rawls

# TRADE SHOW

JZBZ

Strong Microbials

Mann Lake

Dadants

Local Hive

Hive Alive

Advance Science

AFB Vaccine

Pierco

Vita Bee Health

Amiflex

My Apiary Manager

Bee Cleanse

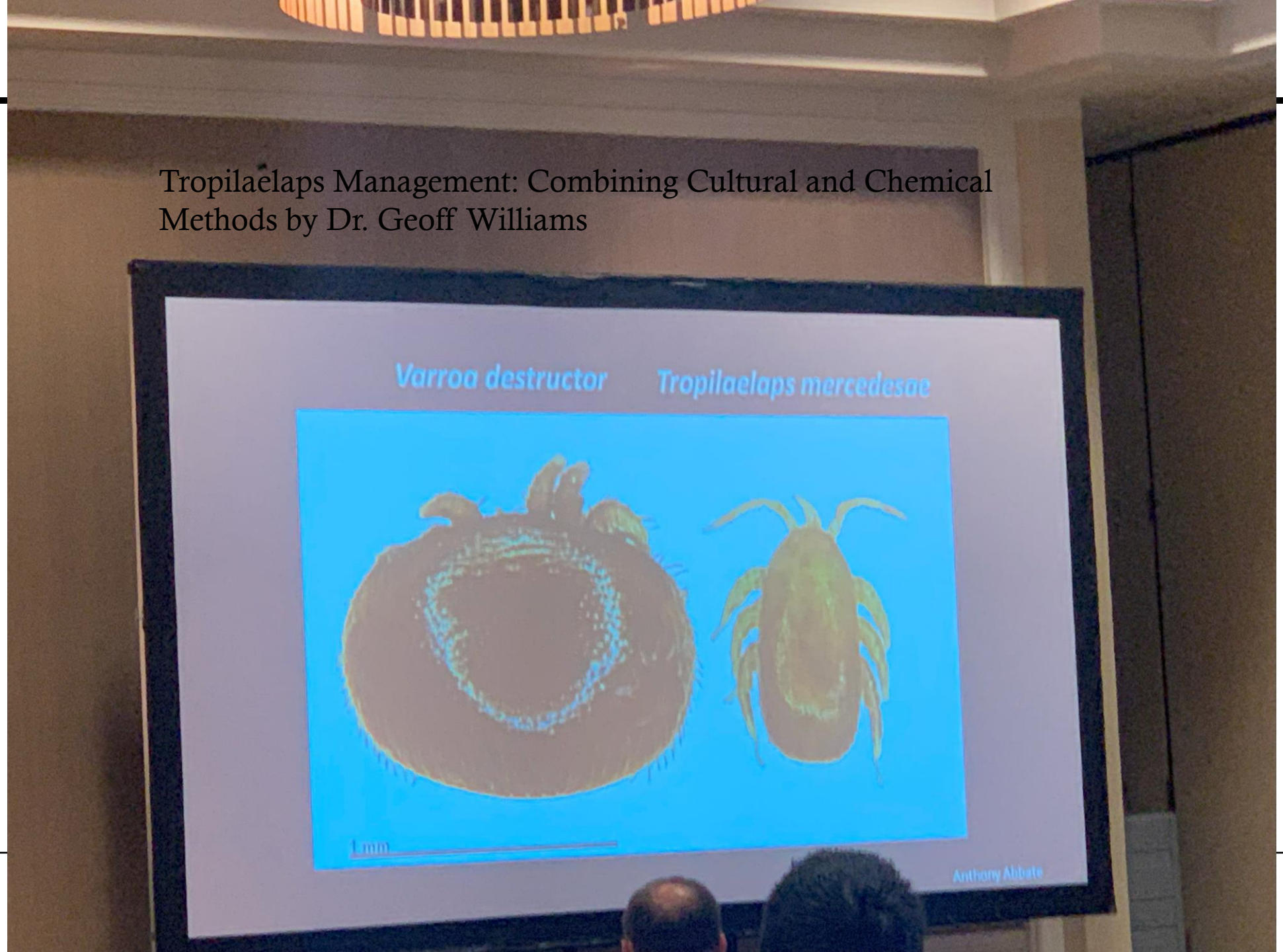
Hive IQ

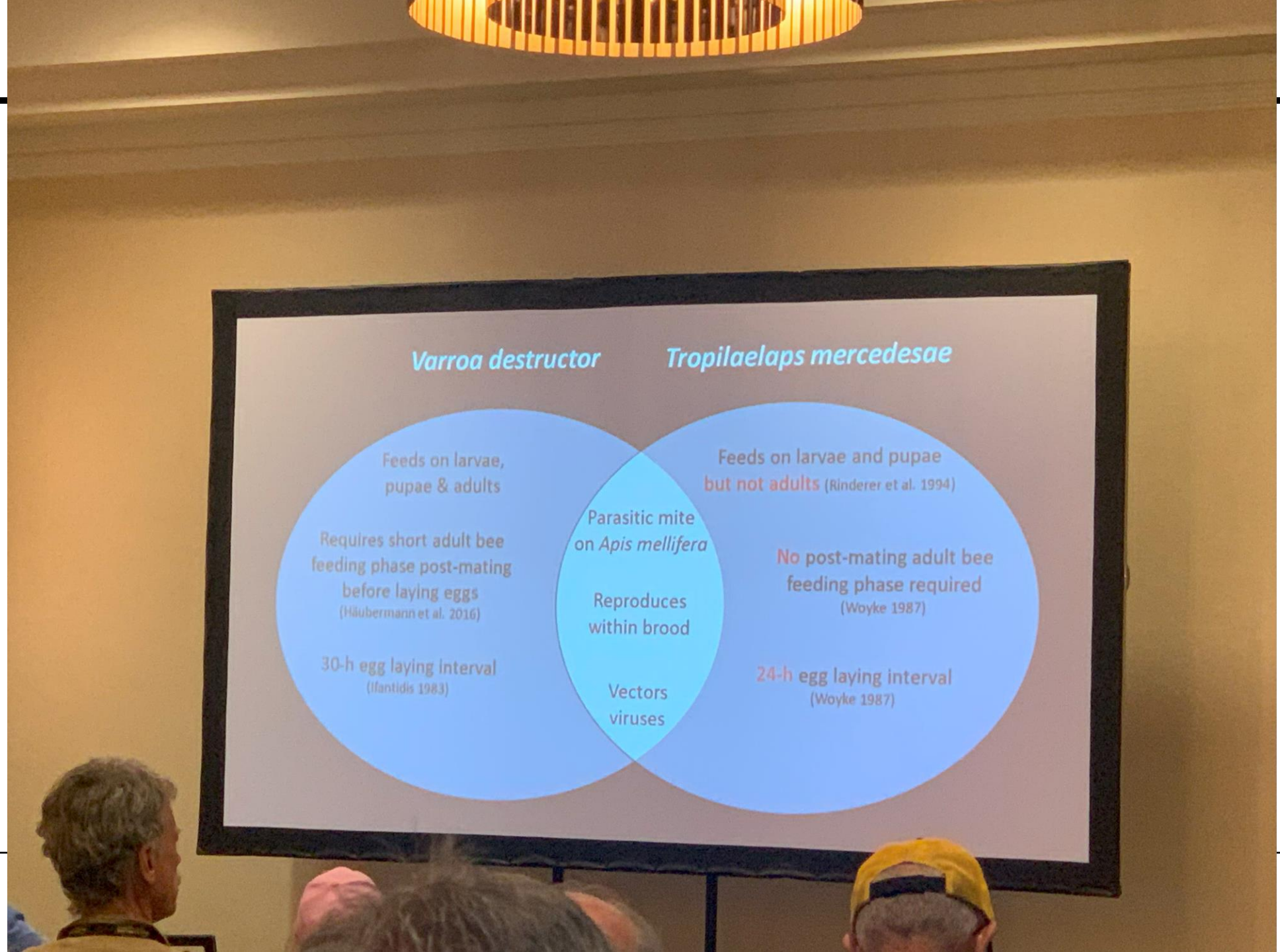
Apis Tactical

Commercial Bee Supply

Hive Max Top Feeder System – PLUS MORE!

Tropilaelaps Management: Combining Cultural and Chemical Methods by Dr. Geoff Williams




Varroa destructor
Tropilaelaps mercedesae
Feeds on larvae, pupae & adults
Requires short adult bee feeding phase post-mating before laying eggs
(Häubermann et al. 2016)
30-h egg laying interval
(Ifantidis 1983)
Parasitic mite on Apis mellifera
Reproduces within brood
Vectors viruses
Feeds on larvae and pupae but not adults (Rinderer et al. 1994)
No post-mating adult bee feeding phase required
(Woyke 1987)
24-h egg laying interval
(Woyke 1987)

## What does the science tell us?

Formic acid is most effective
(Pettis et al. 2017)

HopGuard® and Apivar® were not effective
(Pettis et al. 2017)

Bayvarol® (flumethrin) moderately effective
(Roberts et al. 2020)

Mite protected by wax cell capping

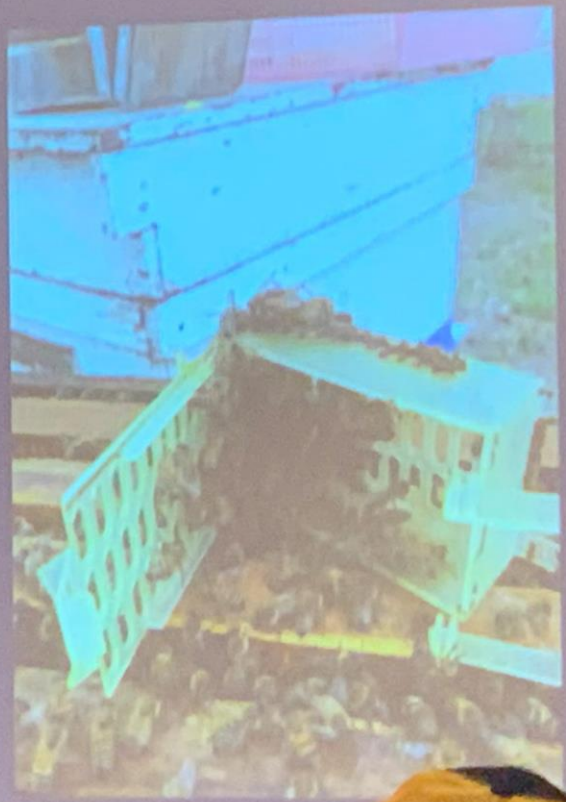
## Utilizing a brood break for *T. mercesedae* management

Mite survives <3 days on adult workers
(Rinderer et al. 1994)

Do not feed successfully until larvae are 3.5 days old (Woyke 1994)

Brood breaks previously showed potential
(Woyke 1985; Roberts et al. 2020)

But not 100% efficacy



# Experimental timelinec

Day 0:

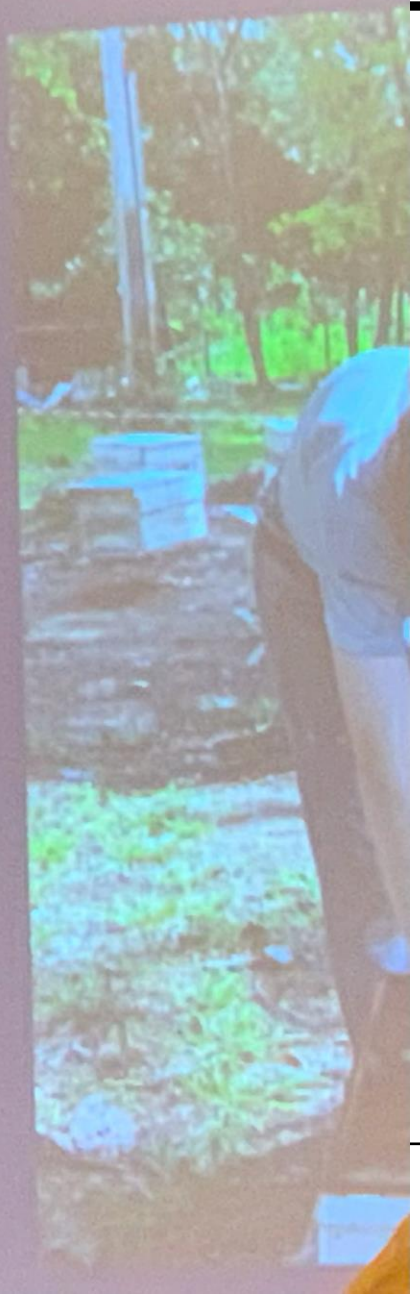
- Queens caged in all brood break colonies

Day 24:

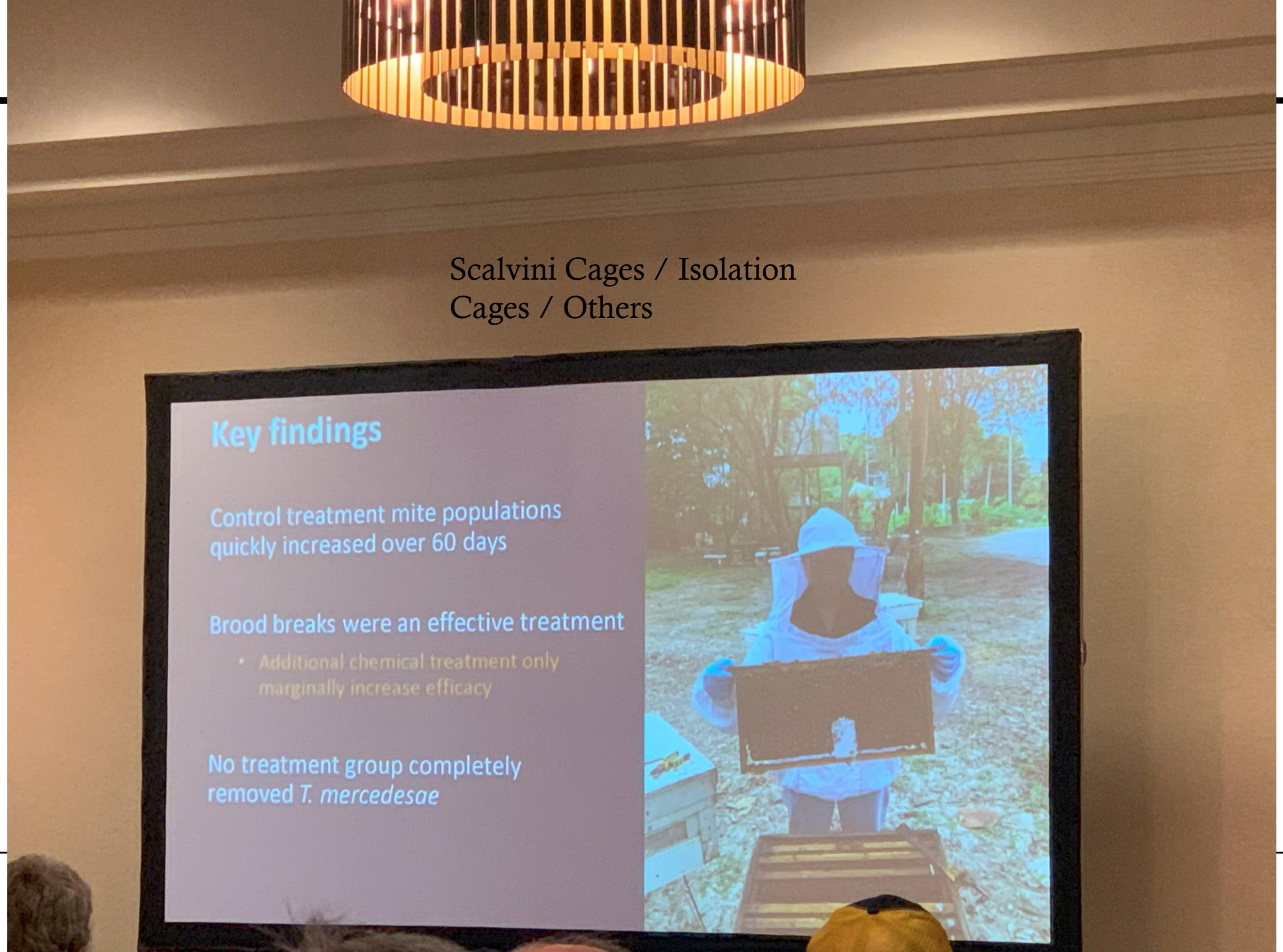
- Queens released in brood break colonies
- Oxalic acid dribble conducted in OA colonies
- One FormicPro® strip applied in Formic colonies

Day 34:

- FormicPro® strips removed



Scalvini Cages / Isolation Cages / Others



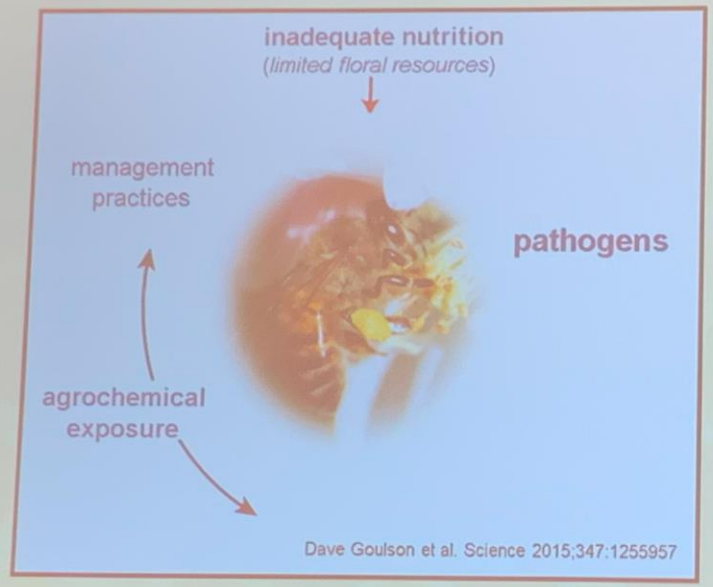

Key findings
Mite monitoring was difficult
• Uncapping brood was timing consuming
• Sticky board require multiple visits
• Bump method did not always obtain the mite
Very few phoretic mites found regardless of brood infestation level
• Alcohol wash done on control colonies –
9 phoretic mites found (but 575 in brood)


Investigating the impacts of virus infections on honey bee health using flight assays
Naomi Kaku
PhD Student in the Flenniken Lab
ngk@montana.edu
Department of Plant Sciences and Plant Pathology
Pollinator Health Center
www.montana.edu/pollinators
MONTANA
STATE UNIVERSITY

## Unsustainable honey bee losses

### US average 38% annual colony losses (2008-2018)*

Countries with losses over 20% in 2013-14:
France, Spain, Canada, Belgium, Ireland, Sweden, England, Israel, and Scotland




*vanEngelsdorp et al, 2008-2018 **Bee Informed Partnership**
vanDerZee *et al.* Gray 2014 *J Apic Res*

### *What is killing the bees?*

**pathogen / virus number**
**CCD-affected > healthy colonies**

vanEngelsdorp et al 2009 *PLoS One*
Cornman et al 2012 *PLoS Path*

**pathogens / viruses**
**dead/weak > healthy colonies**

Genersch, et al. Rosenkrantz 2010 *Apidologie*
Lee, et a vanEngelsdorp 2015 *Apidologie*
Traynor, et a vanEngelsdorp 2016 *Apidologie*

***Hypothesize –***

*Pathogens play a primary role in colony losses;*

*outcome of infection is impacted by bee genetics/ immune response and environmental factors (e.g., agrochemical exposure, forage quality/availability)*

# Deformed wing virus (DWV)

Correlations between pathogen prevalence and/or abundance and colony health . . . .

- high mite infestation & DWV correlate with weak colonies

- mite infestations do not drive the patterns of all bee viruses

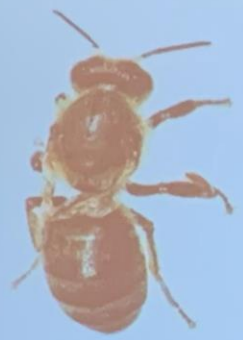
**No antiviral treatment available,
monitor and treat colonies with miticides to
maintain < 3% mite infestation levels**

keep bee equipment clean, UV light / desiccation bee free equipment
(*no host - no virus*)

*How do you tell if a bee is sick?*

**Bee viruses named for associated symptoms**

**but most infections in adults are asymptomatic**

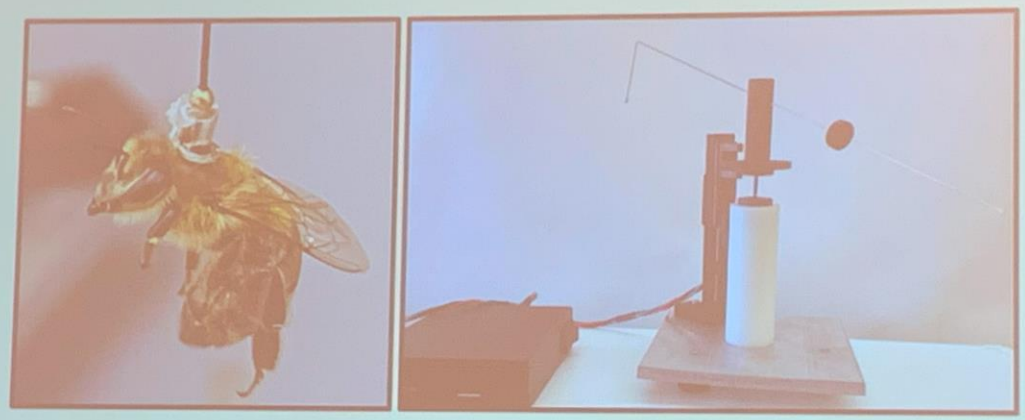


deformed wing virus
(DWV)

DWV infected, asymptomatic adults may have >$10^9$ viruses!

## How do sublethal virus infections impact honey bee health?

## Can flight distance serve as a proxy for honey bee health?



*Hypotheses:*

I. Flight distance will serve as a proxy for honey bee health

II. Honey bees harboring high virus loads will fly shorter distances

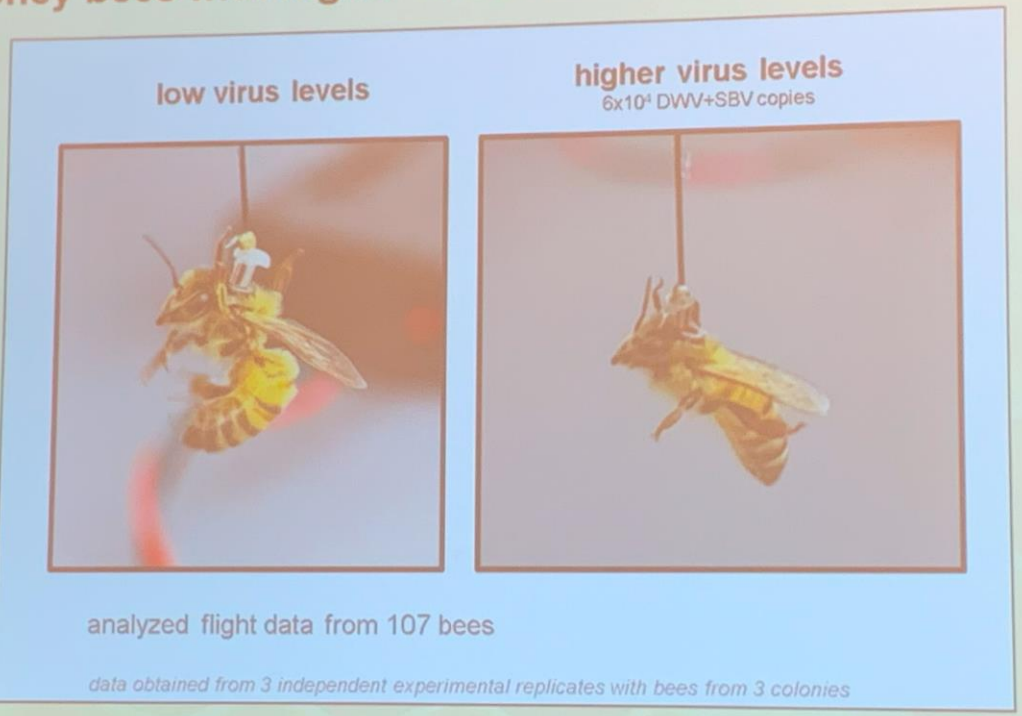
*in collaboration with* **Dr. Mark Jankauski**, *Mechanical & Industrial Engineering Department, MSU*

*Kaku, et al., Flenniken, preliminary*

Wells, et al., Haughton, 2016 *Env. Micro. Rep.*
Tosi, Burgio, Nieh, 2017 *Sci Reports*
Benaets, et al. Wenseleers 2017 *Proc. R. Soc. B*

Montana Department of AGRICULTURE

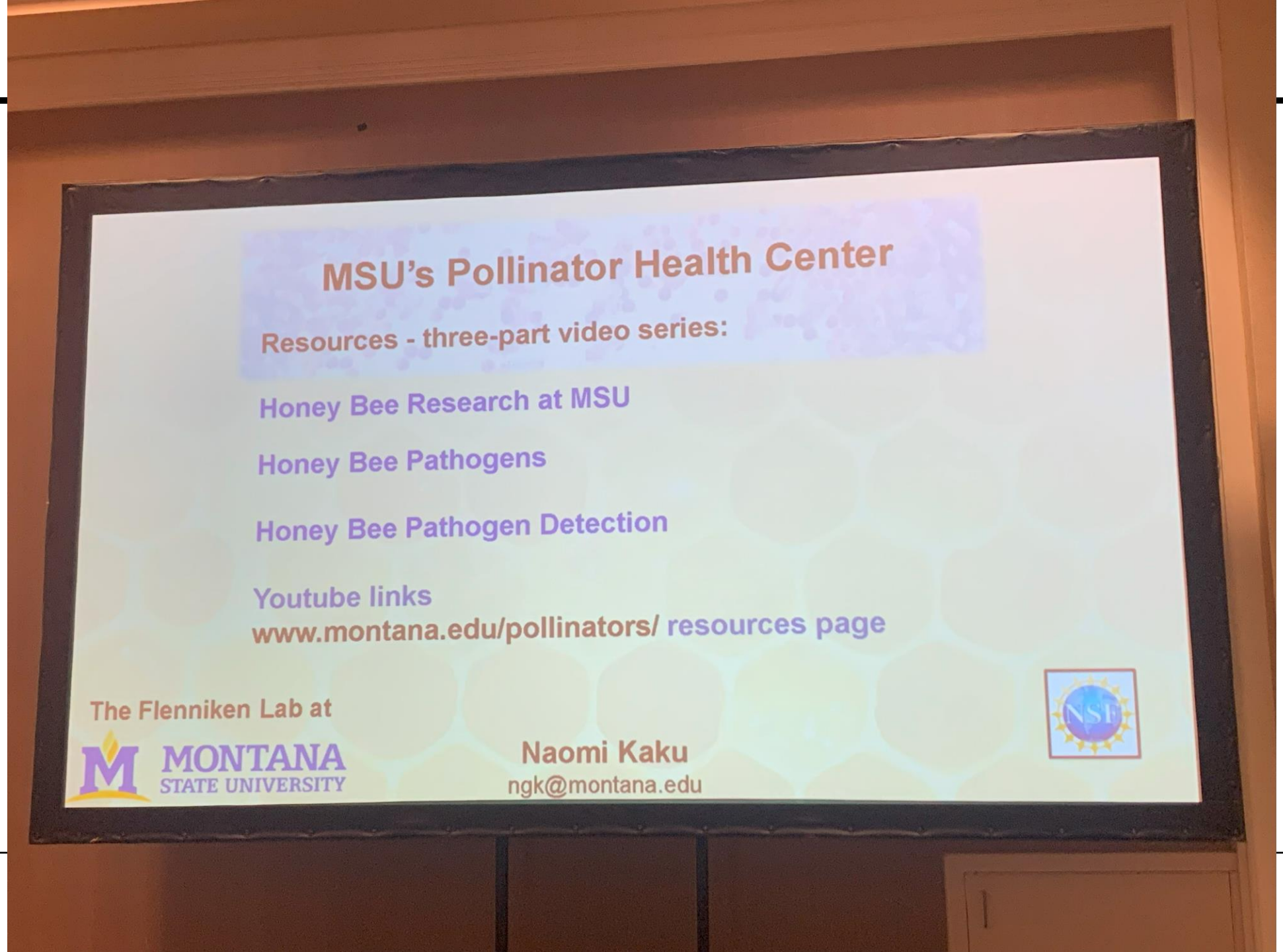
## Honey bees with higher virus levels were more lethargic

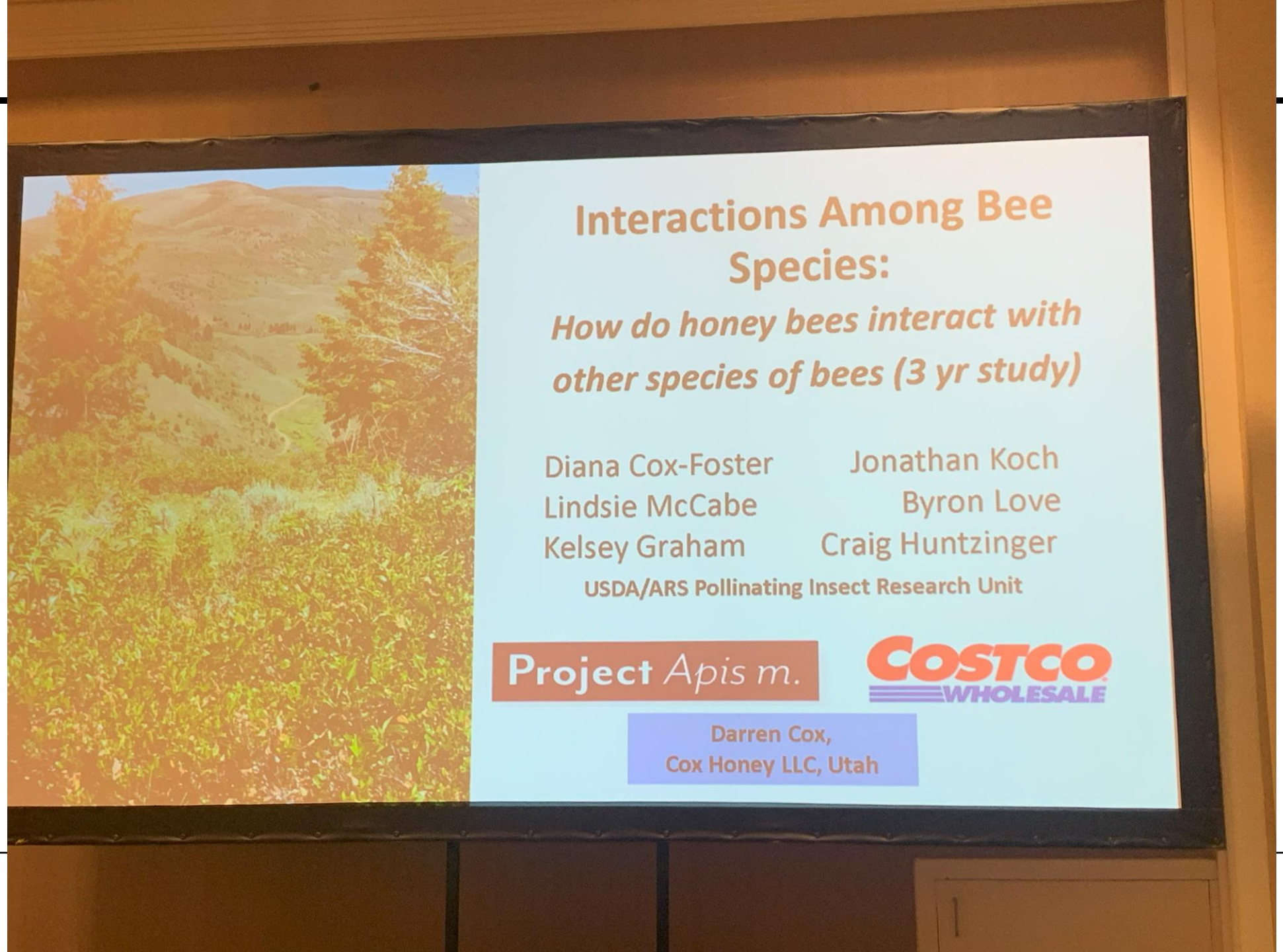



analyzed flight data from 107 bees

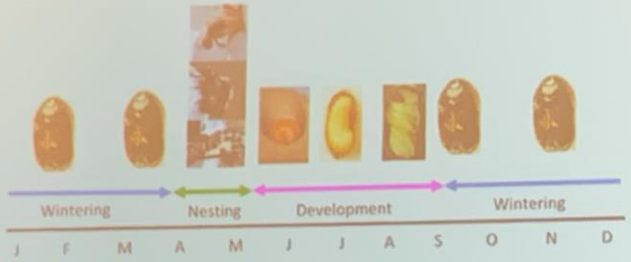
*data obtained from 3 independent experimental replicates with bees from 3 colonies*

*Kaku, Jankauski, Doyle, Flenniken, preliminary data*

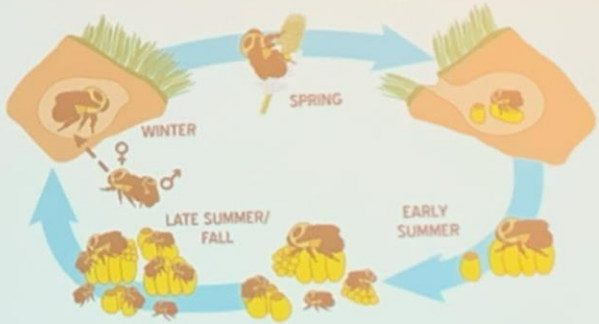

MSU's Pollinator Health Center
Resources - three-part video series:
Honey Bee Research at MSU
Honey Bee Pathogens
Honey Bee Pathogen Detection
Youtube links
www.montana.edu/pollinators/ resources page
The Flenniken Lab at
MONTANA
STATE UNIVERSITY
Naomi Kaku
ngk@montana.edu
NSF


Interactions Among Bee Species:
How do honey bees interact with other species of bees (3 yr study)
Diana Cox-Foster
Lindsie McCabe
Kelsey Graham
Jonathan Koch
Byron Love
Craig Huntzinger
USDA/ARS Pollinating Insect Research Unit
Project Apis m.
COSTCO WHOLESALE
Darren Cox,
Cox Honey LLC, Utah

## Solitary bees

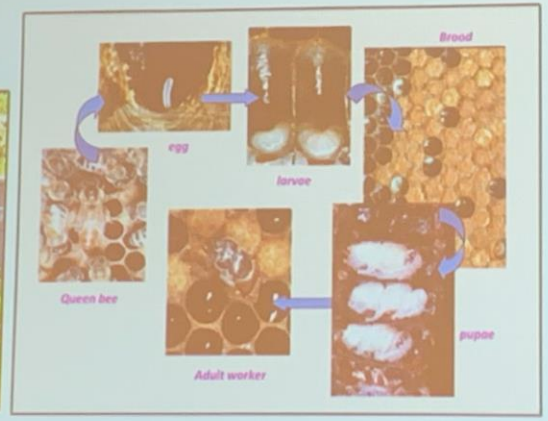



## Bumble bees

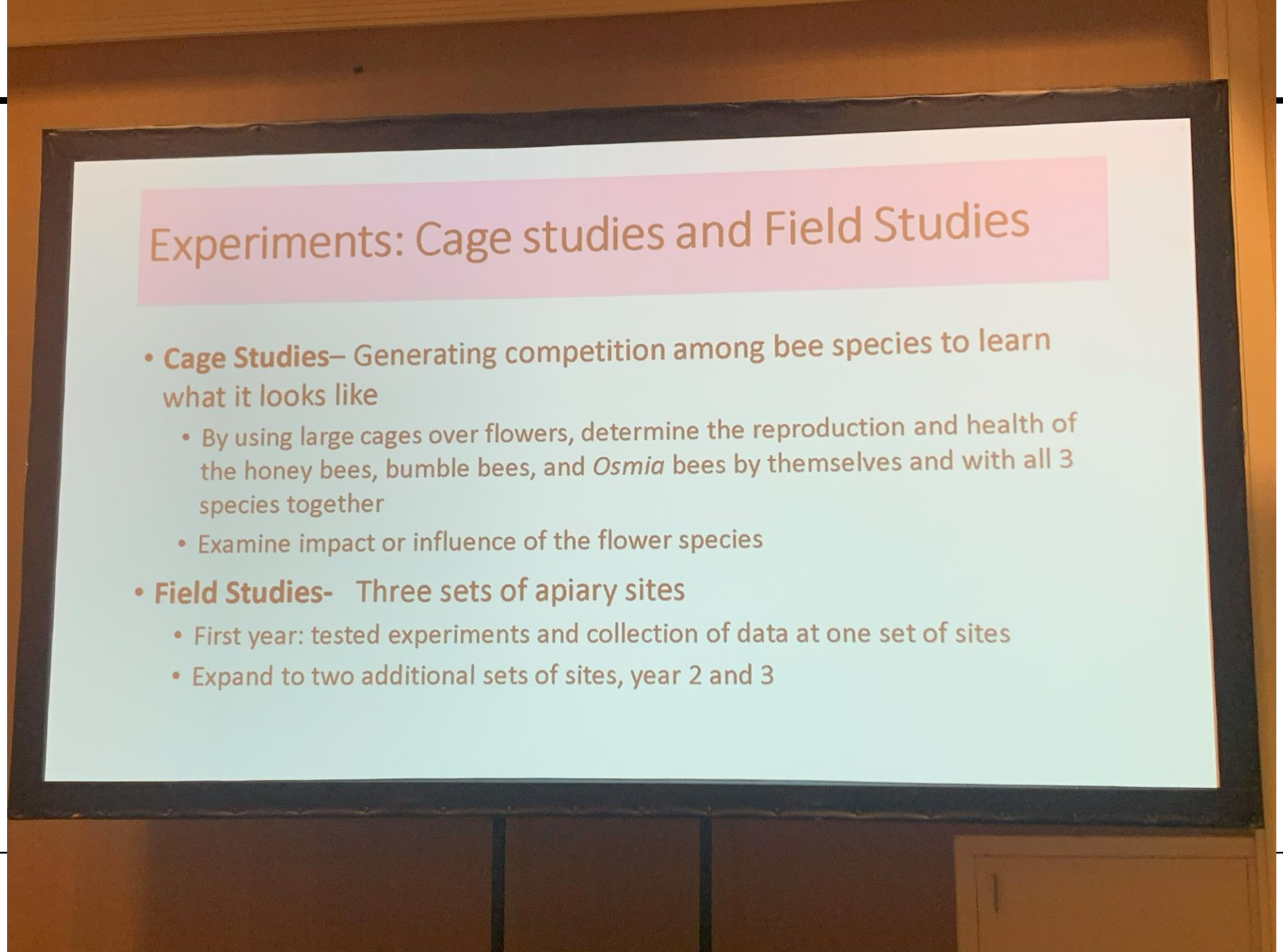


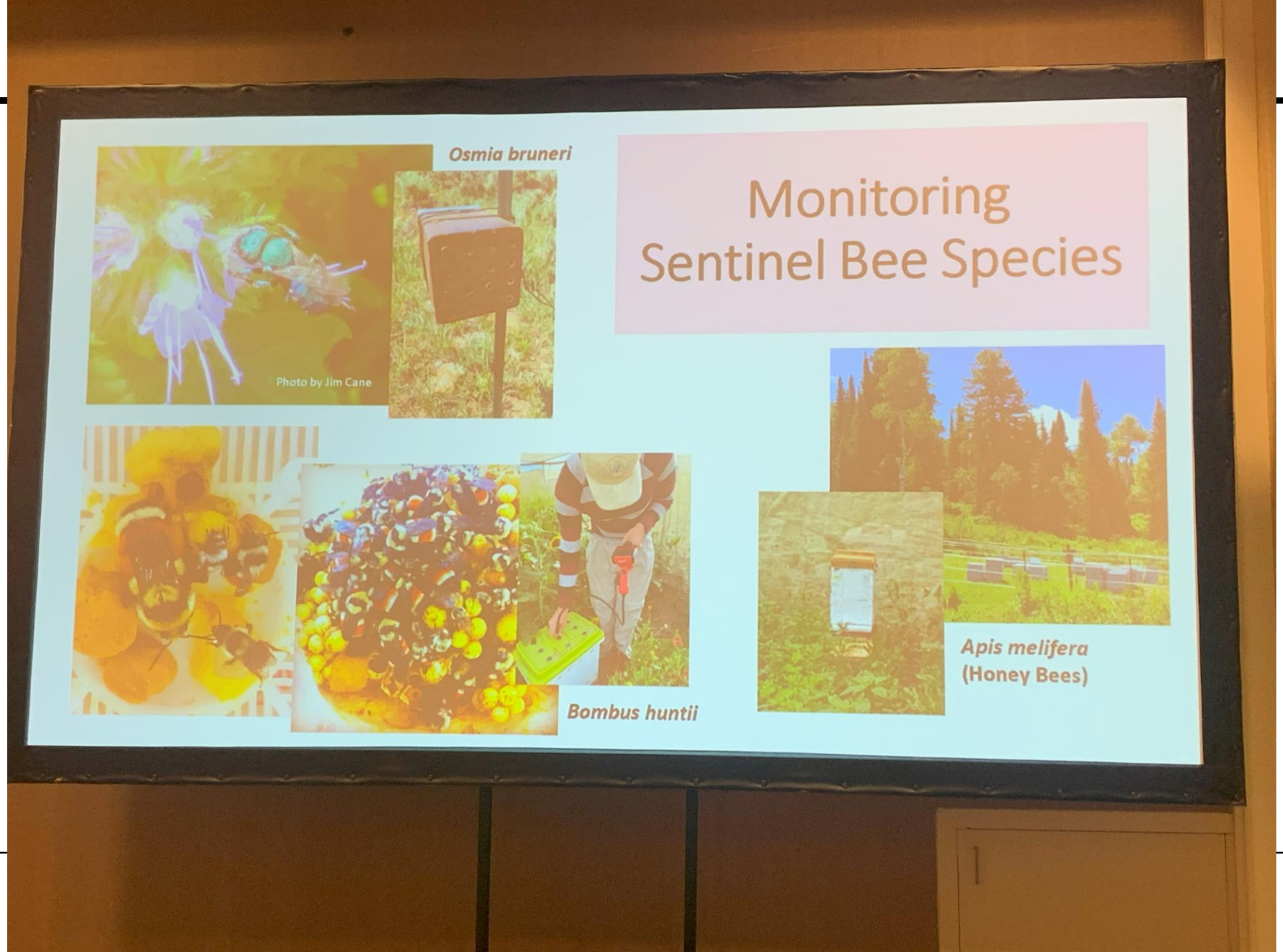

https://wisconsinbumblebees.entomology.wisc.edu/about-bumble-bees/life-cycle-and-development/

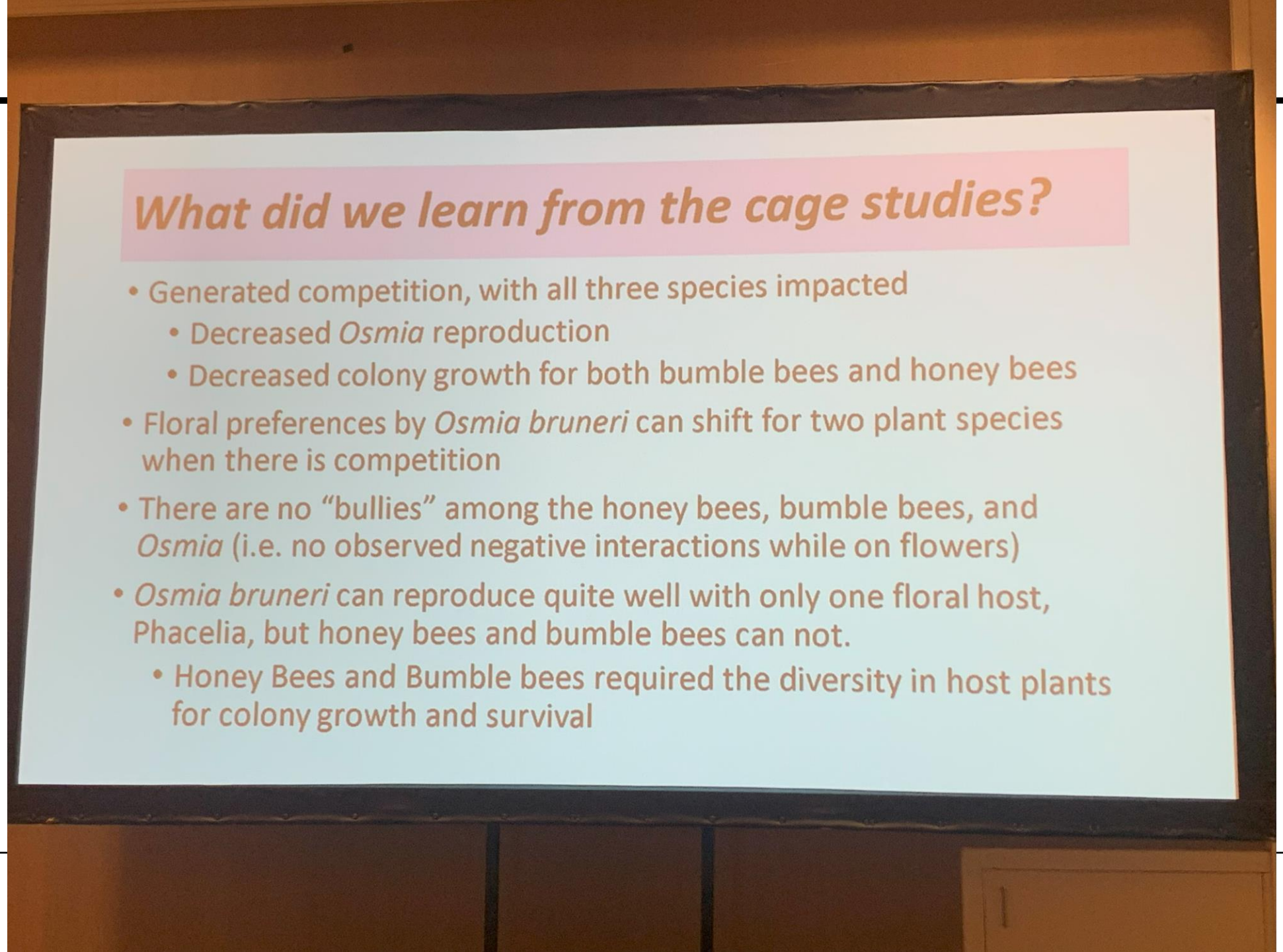
## Honey bees

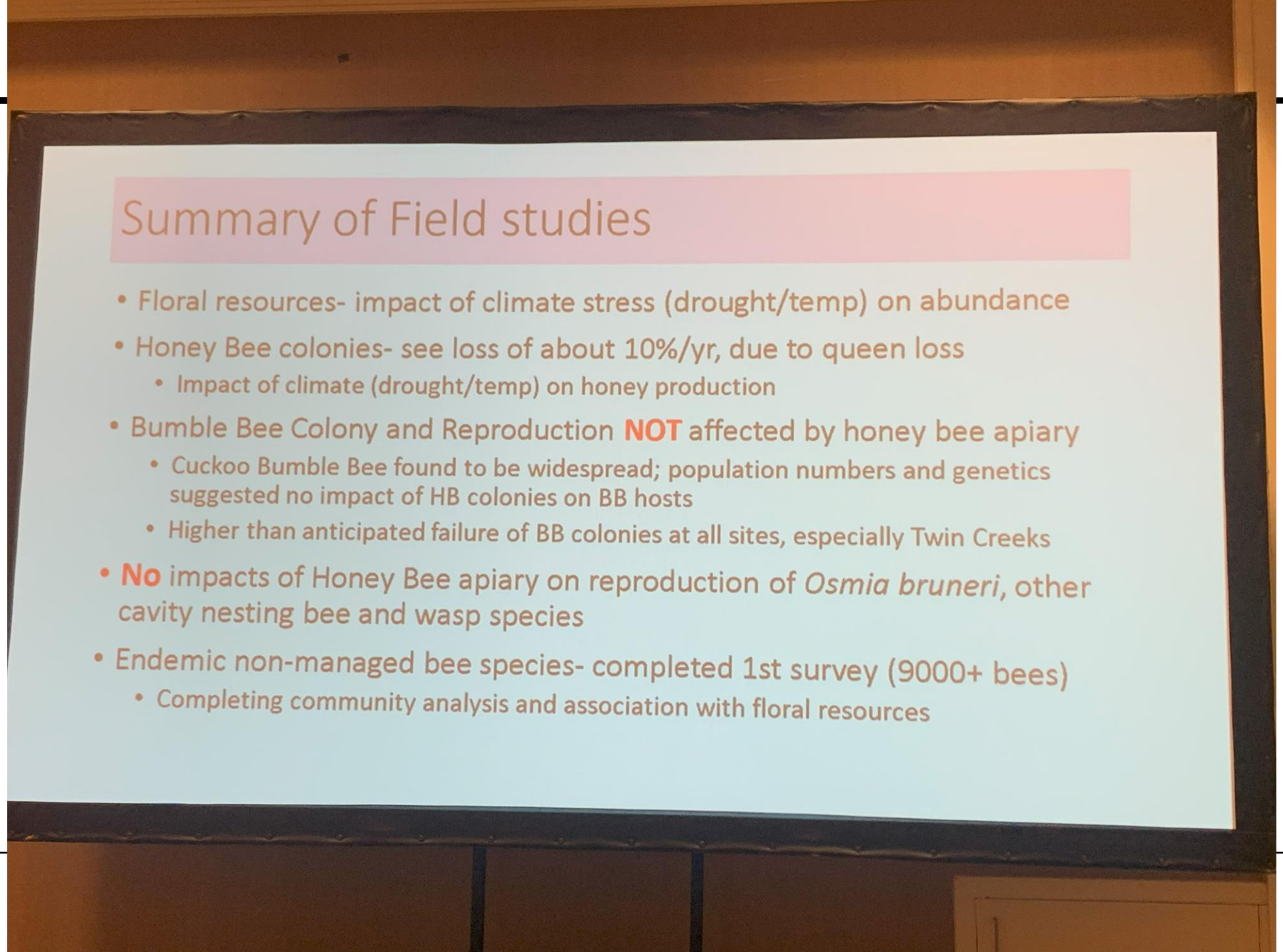


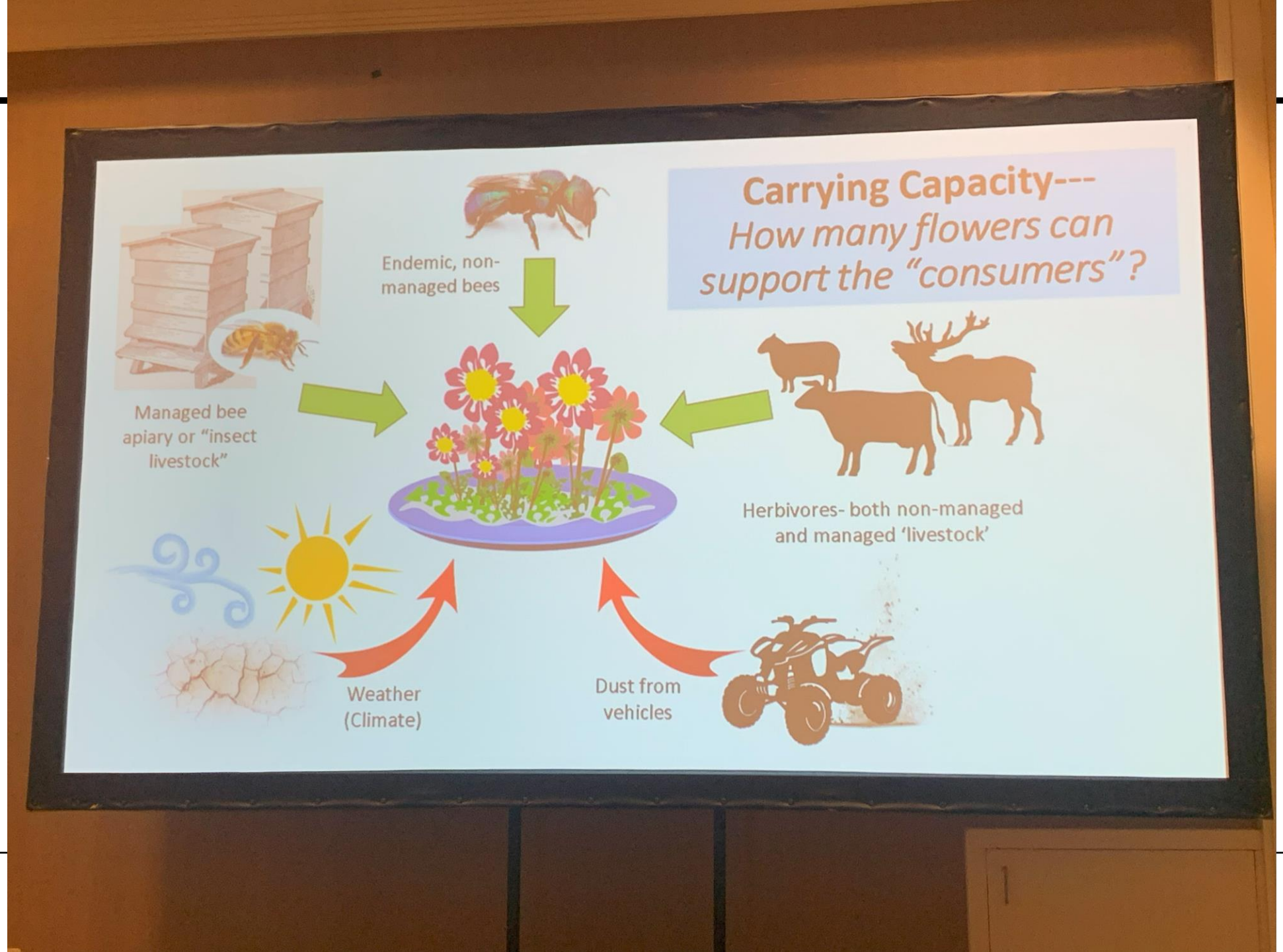

## Diversity in Life Histories– common need for pollen and nectar

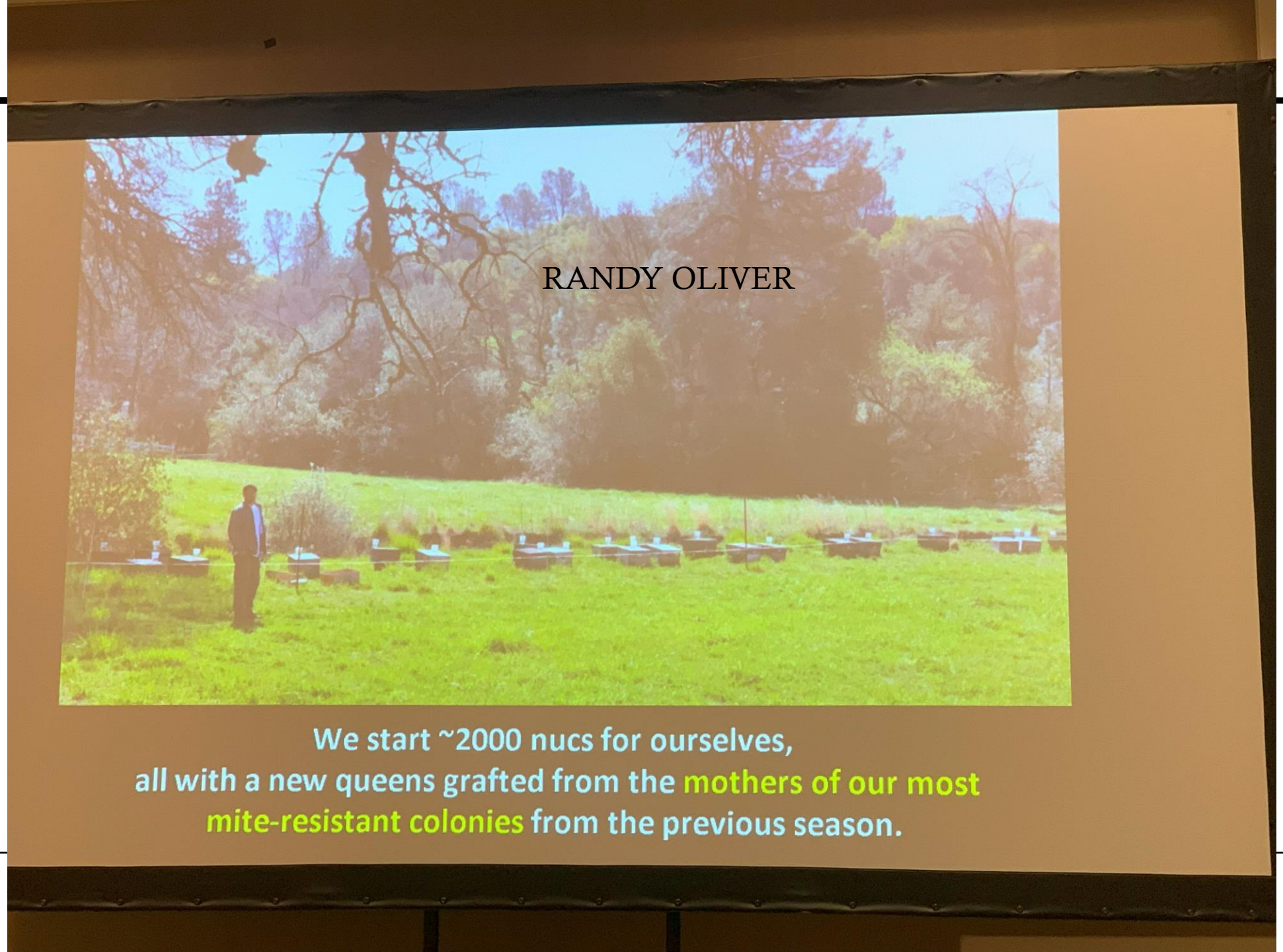

Experiments: Cage studies and Field Studies
• Cage Studies– Generating competition among bee species to learn what it looks like
• By using large cages over flowers, determine the reproduction and health of the honey bees, bumble bees, and Osmia bees by themselves and with all 3 species together
• Examine impact or influence of the flower species
• Field Studies- Three sets of apiary sites
• First year: tested experiments and collection of data at one set of sites
• Expand to two additional sets of sites, year 2 and 3

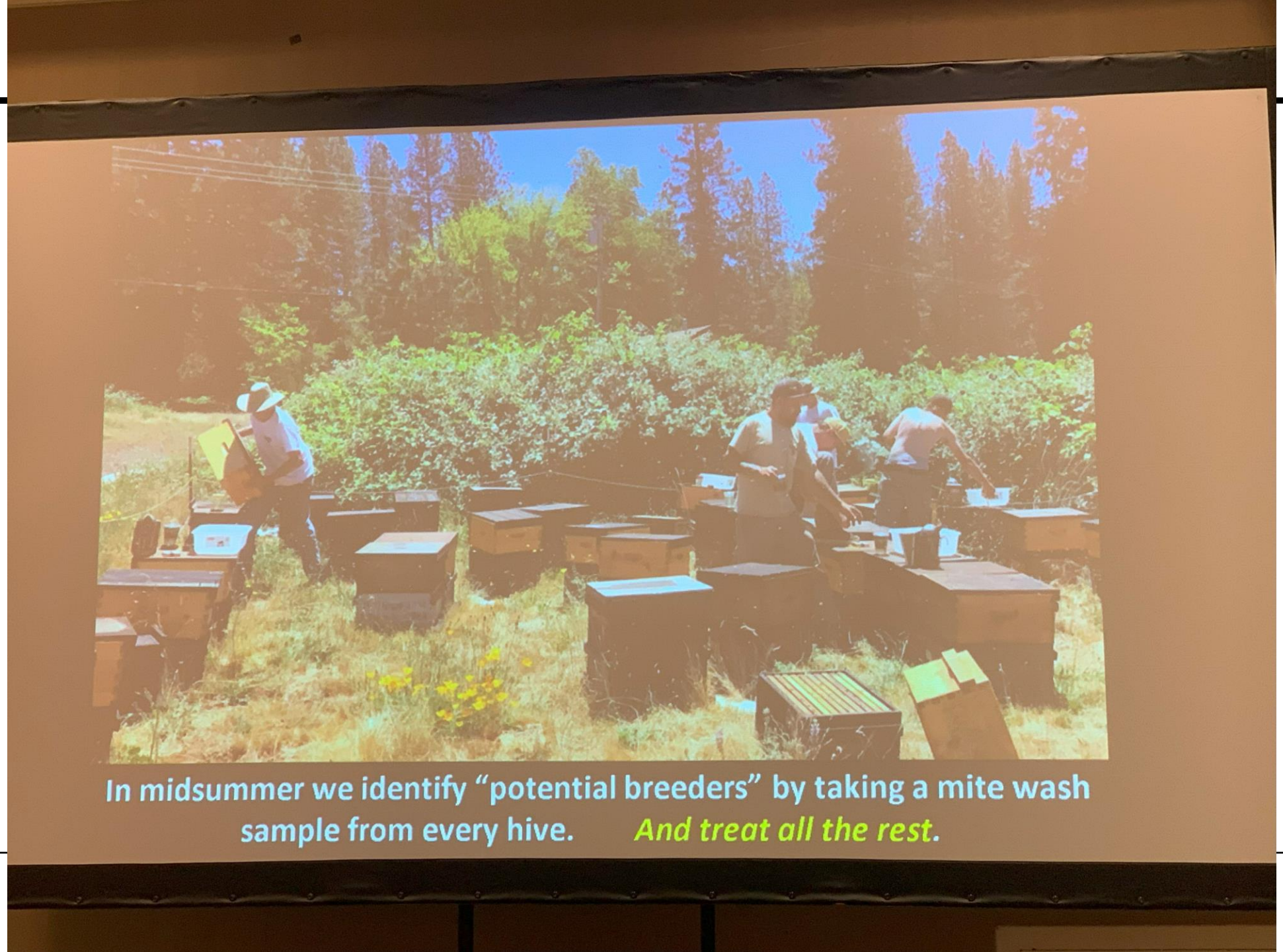

Monitoring
Sentinel Bee Species
Osmia bruneri
Photo by Jim Cane
Bombus huntii
Apis melifera
(Honey Bees)


What did we learn from the cage studies?
• Generated competition, with all three species impacted
• Decreased Osmia reproduction
• Decreased colony growth for both bumble bees and honey bees
• Floral preferences by Osmia bruneri can shift for two plant species when there is competition
• There are no "bullies" among the honey bees, bumble bees, and Osmia (i.e. no observed negative interactions while on flowers)
• Osmia bruneri can reproduce quite well with only one floral host, Phacelia, but honey bees and bumble bees can not.
• Honey Bees and Bumble bees required the diversity in host plants for colony growth and survival

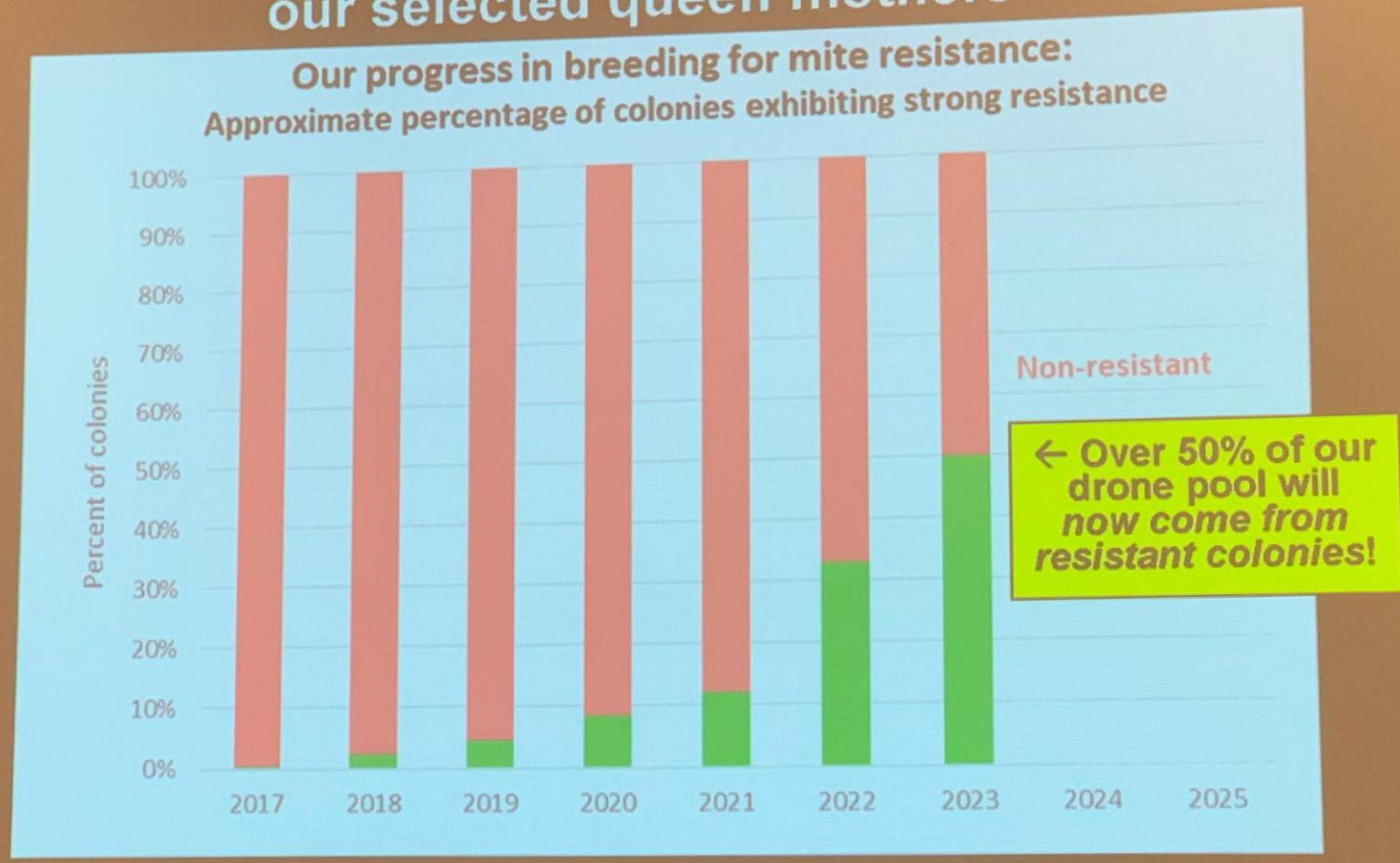

Summary of Field studies
• Floral resources- impact of climate stress (drought/temp) on abundance
• Honey Bee colonies- see loss of about 10%/yr, due to queen loss
• Impact of climate (drought/temp) on honey production
• Bumble Bee Colony and Reproduction NOT affected by honey bee apiary
• Cuckoo Bumble Bee found to be widespread; population numbers and genetics suggested no impact of HB colonies on BB hosts
• Higher than anticipated failure of BB colonies at all sites, especially Twin Creeks
• No impacts of Honey Bee apiary on reproduction of Osmia bruneri, other cavity nesting bee and wasp species
• Endemic non-managed bee species- completed 1st survey (9000+ bees)
• Completing community analysis and association with floral resources


Carrying Capacity---
How many flowers can support the "consumers"?
Endemic, non-managed bees
Managed bee apiary or "insect livestock"
Herbivores- both non-managed and managed 'livestock'
Weather (Climate)
Dust from vehicles

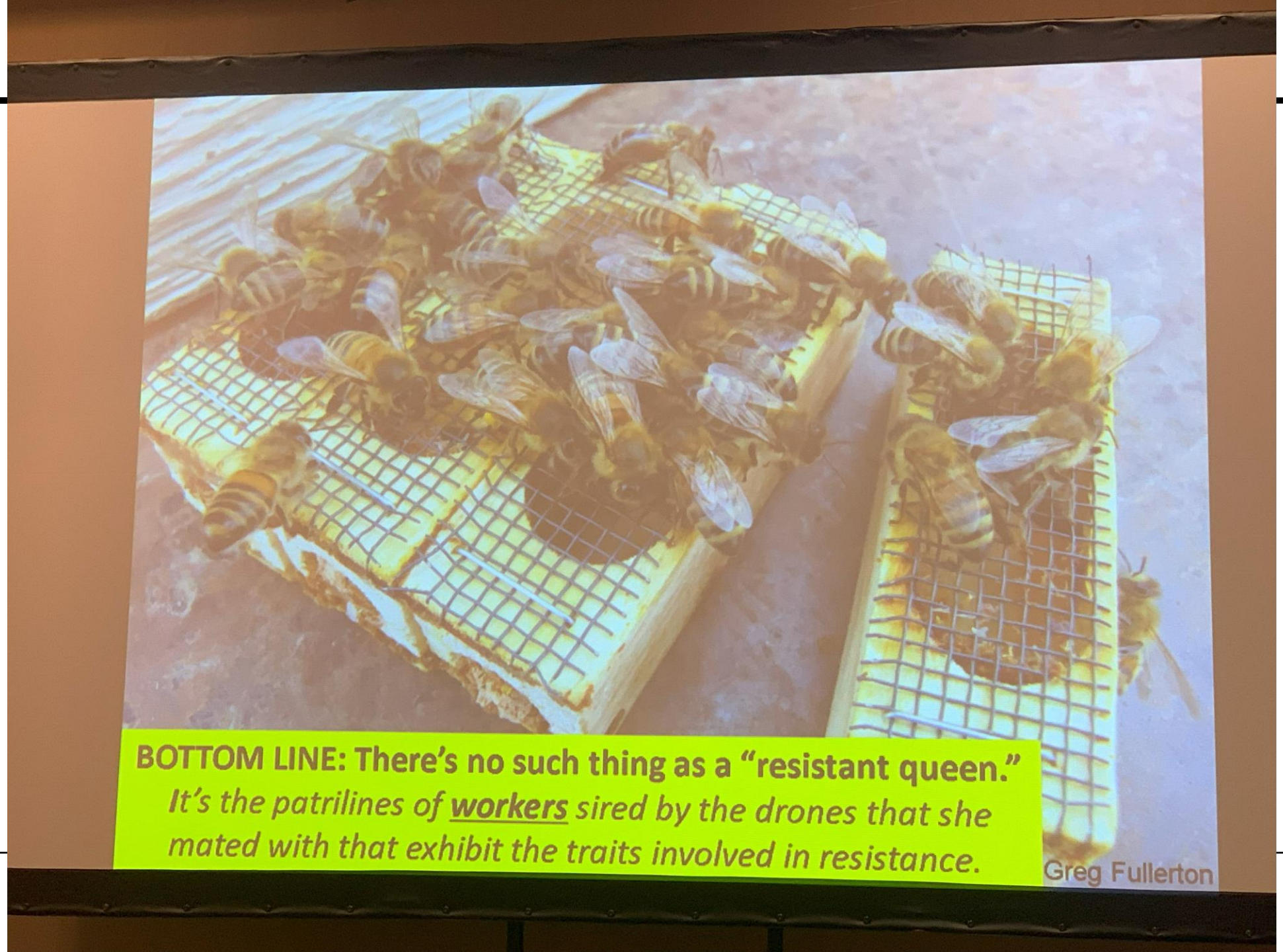

RANDY OLIVER
We start ~2000 nucs for ourselves,
all with a new queens grafted from the mothers of our most
mite-resistant colonies from the previous season.

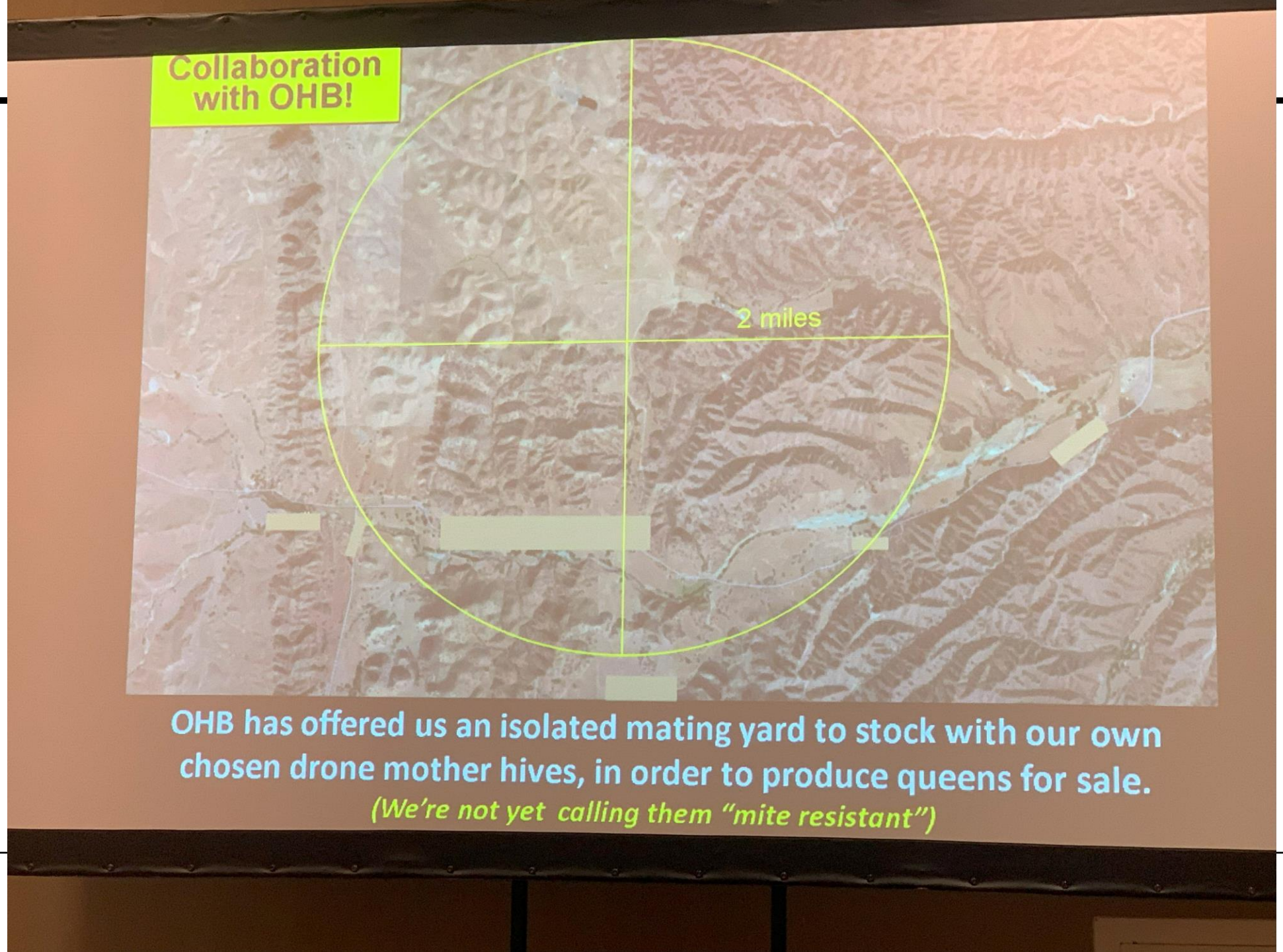

In midsummer we identify “potential breeders” by taking a mite wash sample from every hive. And treat all the rest.

# The genetics of our drone pool lags behind that of our selected queen mothers.




**We may have passed a tip point!**

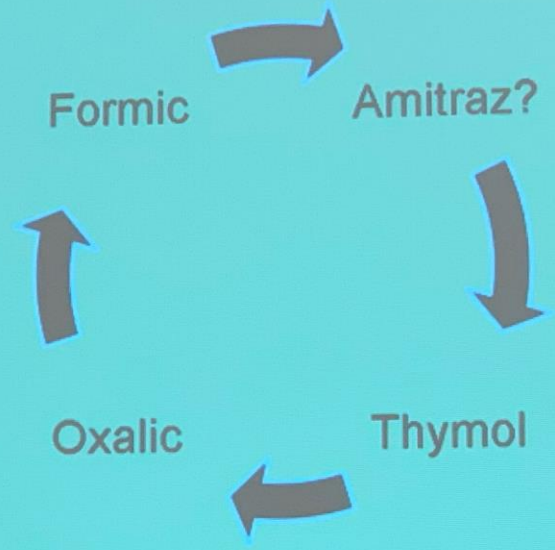

BOTTOM LINE: There's no such thing as a "resistant queen."
It's the patrilines of workers sired by the drones that she mated with that exhibit the traits involved in resistance.
Greg Fullerton


Collaboration with OHB!
2 miles
OHB has offered us an isolated mating yard to stock with our own chosen drone mother hives, in order to produce queens for sale.
(We're not yet calling them "mite resistant")

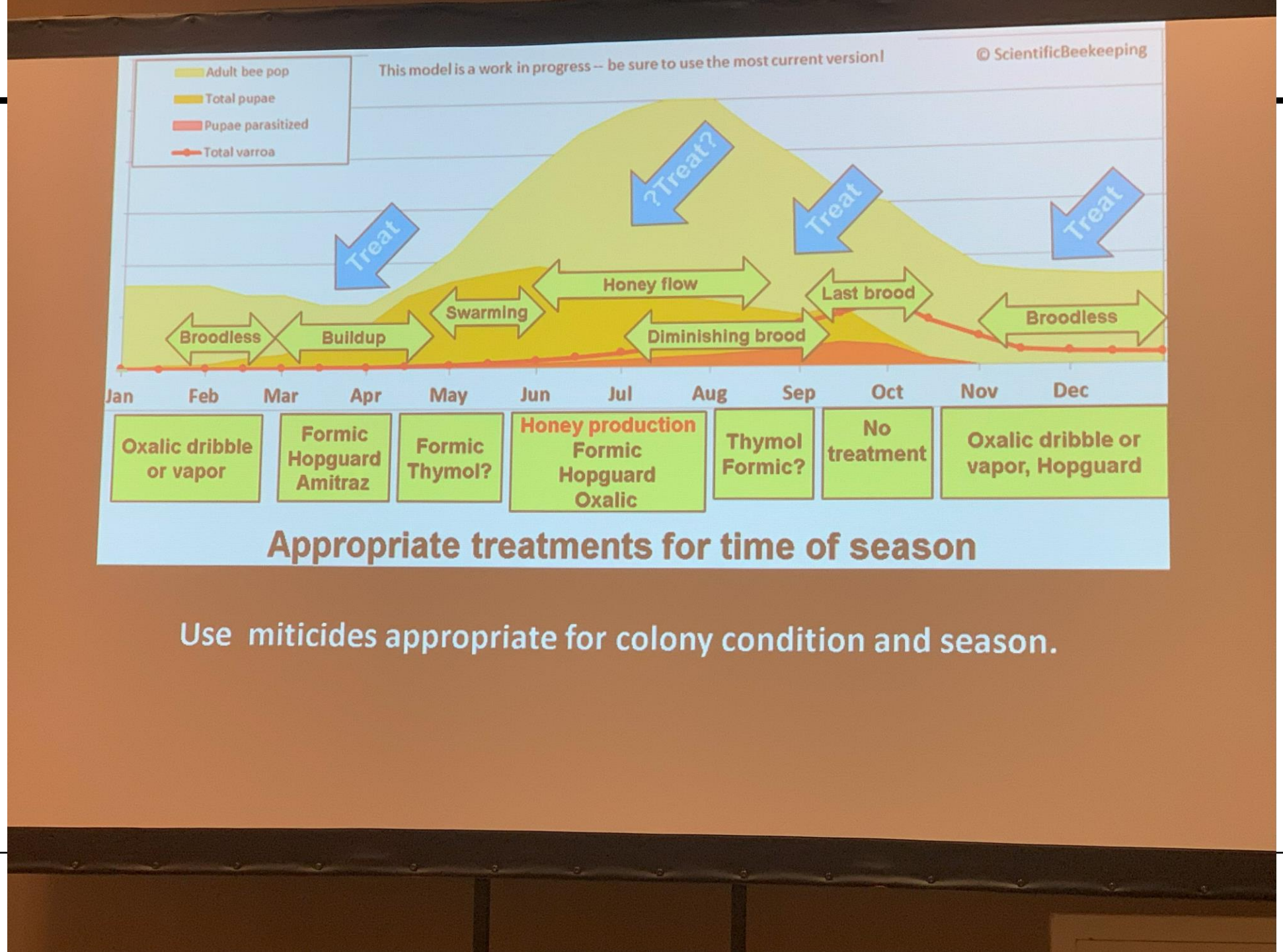
# DON'T DEPEND UPON A SINGLE "SILVER BULLET"!

**Rotate treatments to avoid**

**the development of resistant mites.**




**After any treatment, confirm (by mite wash) that you actually attained the expected reduction in the infestation rate!**




Use miticides appropriate for colony condition and season.

# SO MUCH MORE! VISITING WITH FRIENDS & BEEKEEPERS FROM AROUND THE COUNTRY