

THE MARIN BEEK NEWS

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What's the Buzz?

Our next meeting will be on Thursday May 7, 2015 at the American Legion Log Cabin, 20 Veterans Place, San Anselmo, CA starting at 7:30 pm. The meeting will feature Marla Spivak, PhD, Distinguished Knight University Professor at the University of Minnesota and the recipient of a MacArthur "genius" fellowship. Her lab is focused on how bees can stay "on their own six feet". Among her many projects, she has demonstrated hygienic genetic traits by developing a line of bees and shown the antibiotic use of propolis in the hive.

The title of Dr. Spivak's talk is "Ratchet, Hatchet, Pivot" -- observations about bees and beekeepers in the big picture to open a dialogue with the audience.

Upcoming Meetings:

June 4, 2015

Mark Winston, PhD, Academic Director and Fellow of the Centre for Dialogue, Simon Fraser University, Vancouver, BC.

July

No meeting (Marin County Fair)

August 8, 2015

Annual Marin Beekeepers Potluck

What You Missed

Our last meeting featured a presentation by Elina Nino, PhD. Her expertise in queen biology, chemical ecology, and genomics was honed at the Grozinger Lab at Pennsylvania State University on a prestigious postdoctoral fellowship funded by the USDA National Institute of Food and Agriculture. She is currently the Extension Apiarist at UC Davis.

Dr. Nino began her talk with a research overview on her work with honey bee reproduction. Why study honey bee reproduction? It answers fundamental questions of basic science. From the applied (beekeeper) perspective, the queen is the only reproductive female. Colony loss is often due to queen failure.

Comparison of queens:

Virgin queen

- No ovary activation.
- Weaker worker attraction.
- Takes mating flights, mating with an average of 12 to 14 drones.

Mated queen

- Experiences progressive changes.
- Stops mating flights.
- Ovaries become activated.
- Changes in pheromones and gene expression.

What causes these changes?

Initially, the changes are caused by the volume and quality of semen.

Effect on the Queen

- Ovaries Activate – all queens should be in the same physiological state. But are they?

Do insemination volume and/or seminal components modulate post-mating changes in queens?

Dr. Nino conducted an experiment where queens were raised in small mating nucs. The queens were instrumentally inseminated virgins. Some of the queens were inseminated with 1 microliter of semen or

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saline. Others were inseminated with 8 microliters of semen or saline.

Observations:

- Behavioral –
 - Mating flight attempts stopped after insemination.
- Physiology-
 - Ovary activation
 - Larger amounts of semen/saline produced more activation
 - Gene Expression
 - Queen pheromone production – pheromones are produced by multiple glands
 1. Mandibular gland – Queen Mandibular Pheromone.
 - It is believed to signal queen mating quality.
 2. DuFour's gland – produces esters.
 - Both queens and workers have the gland but the queen and laying workers produce higher volumes of esters than non-laying workers.
 - Virgin queens produce higher amounts of esters. Inseminated queens produce relatively smaller amounts of esters. It is believed to signal queen mating status.

Effect on the Colony

- Worker behavior
- Worker physiology
- Colony health / productivity

Dr. Nino conducted an 11 month long field study comparing egg laying queens that were inseminated with either 1 microliter of semen or 8 microliters of semen. The colonies were checked twice per week during the summer months.

Observations:

- Worker Behavior
 - There was not much difference between colonies with low volume semen queens and high volume semen queens.
 - There was no difference in brood area.
 - In low volume semen queen colonies the workers produced a queen like blend of pheromones.
- Overall Results
 - A larger percentage of the high volume semen queen colonies did not survive over winter. By

April all high volume semen queen colonies had died.

- Possibly due to a higher level of disease in these colonies
- Possibly due to the larger amount of resources it took to produce greater amounts of pheromones.

Not every mated egg laying queen is created equal. It is of the utmost importance to have a healthy well-mated queen for a colony to thrive. The primary factors in regulating queen health are pathogens, pesticides and nutrition. Queens need a quality protein source to produce eggs. Workers also need a quality protein source to feed larvae. It is also very important to have a healthy and abundant drone population at mating time.

Dr. Nino then touched on her research and extension goals in her new position at UC Davis.

Research Goals:

- To support honey bee health through breeding efforts.
- Identify factors involved in reproduction.
- Identify genes involved with diseases.

Extension Program Goals:

- Continue to be a liaison between beekeepers and researchers. She wants to hear from beekeepers about what they are experiencing.
- Develop new resources for California beekeepers, growers and the general public.
- Create a new website.
- Develop new extension material.
- Provide educational opportunities.
- Start a Master Beekeeping Program in California.

Dr. Nino can be reached at elnino@ucdavis.edu

From the Librarian's Desk

It's hard to imagine there's time for reading during this busy bee season, but do stop by the library table and see if there is a book or magazine that will provide some tips to help you through. Thinking about entering the "Baking with Honey" division at the Marin County Fair? We've got a couple of cookbooks to help inspire you. To all those who bring back your borrowed items, don't forget to enter your name in the draw!

Hive Tips

By Bonnie Morse,
[Bonnie Bee & Company](#)

- **Prevent your bees from swarming: make sure there is adequate space in the brood chamber.**
 - Strong hives are building quickly. If your bees are starting to get crowded, add more space. Most importantly – be sure there is contiguous space in the brood chamber. If you add additional space, but there is only honey between it and brood area, you will not prevent brood area congestion – which is the cause of swarming.
 - Adding a new hive body above the brood with new frames? Help entice bees to move up by adding a frame of with built out comb in new box. Are you a new beekeeper who doesn't have any frames with built out comb? Help entice the bees to move up by pulling a frame with young brood (young larvae & eggs) up into the new hive body from area below. Nurse bees will stay with these bees and their presence above will entice building in the new hive body. If you do this:
 1. Be sure frame you pull up is kept directly above other brood frame(s) for easy access by nurse bees.
 2. Replace frame you pulled in lower box. At this time of year (warmer temps so bees can break cluster to access food in different parts of the hive), you can place the replaced frame in the brood cluster area, OR between outermost brood frame & food frame, OR outside last frame in the box.
 - In spring during a strong nectar flow, check your hive(s) every 2-3 weeks.
- **You tried to stay ahead of your bees and give them ample space, but they swarmed anyway. Now what?!**
 - Give the new queen time to emerge, mature, go on mating flight(s) and start laying. You don't want to disrupt this process too early. Give the colony about 3 weeks before you check for brood.
 - You don't want to wait too long, either....if the queen is not successful in returning from her mating flight, you'll want to give the bees a hand

(by getting a frame of brood with eggs and young larvae from another colony, or by ordering a mated queen) before they get laying workers, which complicates the process.

- Keep in mind....weather (rain / cooler temps) can delay mating flights. Think your colony should have a replacement queen but you don't see evidence of her? There are other signs that can indicate whether or not there is a queen:
 1. Sound of the bees: calm/relatively quiet, as opposed to the sound of the "[queenless roar](#)".
 2. Work being done: Bees remain purposeful and busy.
 3. Combs in brood area remain open. (If queenless during a nectar flow, bees will start to plug up with food.)
- If there is no brood, you'll want to be extra cautious. If you injure or damage the new queen, the bees will not have the resources (eggs/young larvae) to make a new one.
- **On the other hand....the flow (nectar and pollen) has slowed considerably in the last few weeks in some areas.**
 - (If you're on the swarm list, you know this isn't the case in southern Marin!) The effect this has on a hive will vary considerably based on location and each individual colony. Overwintered colonies that may have had excess stores coming out of winter in addition to being able to take advantage of early spring conditions may be in a better food storage position than new spring nucs, splits and packages. Colonies in southern Marin and north along the 101 corridor tend to have more forage available at this time of year than northern Marin and areas in central Marin west of San Anselmo. Coastal bees are about to (and already starting in some areas) get a treat with the blackberries.
- When inspecting your hive(s), be on the lookout for stored pollen (bee bread), nectar, and capped honey. Is it there? Great. Not? Consider feeding. It may seem early in the season to do so, but lack of March & April rains are causing an earlier summer dearth than is usual. Also, with the increase in popularity of beekeeping, there are simply a lot more bees that need food. Be mindful that feeding can have unintended consequences of attracting ants and/or robbing and mitigate as needed.

Beekeeping Classes

Beekeeping Basics (3 hours, \$35)
With Bonnie and Gary Morse

Saturday, May 16th, 9:30am – 12:30pm, tentative
location: San Geronimo
Limited to 20 participants

You have your bees, now what?? Learn tips and techniques for using smoker, bee brush and hive tool. We will look into how to work your frames and what to be looking for to determine health of your queen and the colony as a whole. As urban beekeepers, it is important to prevent swarming (to the best of our ability), so you'll learn what causes swarming, how to prevent it, and how to recognize early warnings that a colony is making preparations to swarm. You'll also get to see what a laying worker colony looks like (we inevitably have a few from queens who didn't successfully return from mating during our nuc production) and techniques for making it queenright.

Email bonnie@bonniebeecompany.com to register.

A new framework of living with bees.
with Michael Thiele/gaiabees.com

Saturday, May 30th, 9am – 4pm
Location: Green Gulch Farm, Muir Beach, CA
In this workshop we will explore a radical shift in Apiculture towards bee-centric management and examine how principles of wild Honeybee nests and Sanctuaries can inform our apiaries and be a resource for health and life vigor for "backyard beekeeping". How can we integrate core principles into our own apiary? We will examine the nature of bees on multiple levels and will visit local wild and managed hives within the Green Gulch water shed. This workshop is open for practicing beekeepers as well as for beginners and all "bee-lovers."

Information & reservation
at <http://www.sfzc.org/ggf/display.asp?catid=&pageid=1457>

Summer and Fall Hive Management class series
(9 hours, \$99; Drop in for classroom sessions only = \$25/each session) with Bonnie and Gary Morse

Class room sessions: Wed. 7/8 - 7/22, 6:30pm - 8:30pm, 3 classes, course code 24049, San Rafael Community Center, 618 B St., San Rafael

Field Day: Sat. 8/8, 9:00am - 12:00pm, location TBD, tent. San Geronimo

Late summer can bring a variety of problems including increasing mite counts, yellow jacket attacks and lack of forage. Learn to identify the signs and symptoms and how you can assist the colony during difficult times. Your bees have already started getting ready for winter and so should you: how and when to reduce colony size, determining how much honey to remove, how to extract the honey and more. Field day will include sugar rolls for mite testing, identifying food stores & colony needs, and how to "read" your monitoring board.

Additional information and registration available

Fair News

The **2015 Marin County Fair** is fast approaching. The official Fair entry form deadline is 14 May 2015. If you entered last year you should have received an entry package by now. If not, or if you are entering for the first time, there are entry forms and the 10 category descriptions for the Adult Honey Department on the Fair website, under Competitive Exhibits.

<http://www.marinfair.org/2015/competitive-exhibits/adult-exhibit-information>

Entry forms are available at
<http://www.marinfair.org/~media/files/fair/2015/contest/2015-entry-form.pdf?la=en>

Please don't be shy, enter as many categories as you wish. Exhibits will be received over 2 days at the Exhibit Hall at the back of the Fair Grounds. **Friday, June 12, 3 pm to 7 pm & Saturday, June 13, 10 am to 5 pm, Exhibit Hall.**

This is an opportunity for all of us to participate in a little good-hearted competition with other beekeepers on all types of hive products: honey, beeswax, and candles. Cash prizes are associated with the first 5 places. There are two big prizes, the Best of Show and the Barney Salvisberg Award, a founding member of Marin Beekeepers. Again, this year each will have additional monetary awards. All the exhibits are on prominent display at the bee booth during the fair (ribbons included) for your friends and neighbors to see, and we can showcase the many different hive products produced locally in Marin. There is still time to assemble and get your entries in. Next up is staffing the bee booth inside the exhibit hall

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during the Fair which this year is from **Wednesday July 1st to Sunday July 5th**. This is our club's opportunity to do outreach and get the word out about our little "trusts" and hopefully dispel some misinformation. We get to talk about bees, show off the observation hive (a fresh one every day), look for the queen and enjoy the various reactions. Even as a "newbie" you have more knowledge than most of the public. The club also gets paid from the Fair to help continue our excellent list of speakers.

We staff the bee booth with 2 people during each 3- to 4-hour time slot. In exchange, each staffer receives a pass to get into the Fair and each time slot will have one car pass to the exhibitors' parking lot in back of the exhibit hall. The rest of the day you can enjoy the other parts of the Fair. Check out the entertainment at the web site <http://www.marinfair.org/2015/concerts> (included with entry), special events and attractions, especially the fireworks display each night at 9:30 p.m. The sign-up schedule to man our booth was sent out via the BUZZ. To sign up for a time slot email Dan Stralka with your preferences. Stralka.daniel@epa.gov Please sign up and join in the fun!

The important dates are:

May 14

Entry forms due in with this year's entry fee of \$2.50 per entry.

June 12 and 13

Drop off exhibits in the Fair building at the back of the Fairgrounds

Friday, June 12: 3:00 to 7:00 p.m.

Saturday, June 13: 10:00 a.m. to 5:00 p.m.

We can accept late entries even if you hadn't submitted a form. Fill out the forms before you come to expedite the processing.

June 14

Judging by Chef Frank Villa, Executive Chef at Marinitas in San Anselmo.

June 22

Finalize Bee Booth sign-up.

July 1 to 5

MARIN COUNTY FAIR!

July 7

Entry retrieval and collection of awards.



Making Candles to Exhibit at the Marin County Fair