ISSUE 92 | APR/MAY 2018

Kelley Beekeeping

SERVING THE BEEKEEPER SINCE 1924

NEWSLETTER

~ Monthy Beekeeping Information, News & Support ~

Photo: M. Kirby

Bee Science

Researchers create microparticles that could help save honey bees

by Scott Weybright

PULLMAN, WA – Honey bee colonies could be saved from collapse in the future thanks to a microscopic particle that attracts pesticides, as created by Washington State University researchers.

Consider this: A grain of salt weighs 58,500 nanograms. It takes only 15 nanograms of pesticide to kill a bee.

Researchers at Washington State University have developed a new material that attracts pesticide residue in bees. Over time, pollen tinged with itsy bitsy amounts of pesticides accumulates in a bee's body, reducing the lifespan of each bee in a colony.

Toxic residue magnet

"The material acts as a magnetic microsponge that absorbs

(CONTINUED ON PAGE 6)

IN THIS ISSUE

Bee Science: Microparticles 1
From the Queen's Court 2
Q&A 5
Bee Health:
Bee Informed Survey 8
Bee Thinking About:
Our Farms, Our Future Podcast..... 9
Thinking Outside the Box:
TV Review: *Rotten* 10
BeeArts:
Listening to the Bees 11
Conferences & Festivals:
CA Honey, WSU Bee Lab..... 13
Upcoming Events 15

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From the Queen's Court

by Melanie Kirby

What a breezy, wheezy month! They say that spring will come in like a lion and exit like a lamb. It seems though that the lion continues to roar for a bit. There is still snow falling in many of the northern states. Heavy rains and flooding persist in some areas while others already have wildfire season upon them. All in all, it keeps our bees on their "toes" and keeps us as their keepers, humble.

Last month I travelled to California to get my bee season started. Then I had the great pleasure of visiting beekeepers at the Wyoming Bee University in Cheyenne. It was a great event and was organized so well. This month, I travelled to St. Louis, Missouri for the National Sustainable Agriculture Research Education (SARE) conference. I met some very interesting farmers and pollinator researchers there; all of us interested in sharing techniques on how to grow food, raise livestock, and create livelihoods that can support our local and regional communities.

One of the most delightful interchanges I had was with Rachel Coventry and Maggie Wachter of Champaign, Illinois. They had a poster next to mine sharing a farm research project that they conducted at the Curtis Orchard for North Central SARE. Rachel had been a Peace Corps volunteer. After introducing ourselves to each other, she asked me where I had done my Peace Corps service. Lo and behold! We had both served in the same country—Paraguay; though I had trained her trainer!

It was wonderful to meet someone who had served their country as a technical ambassador in beekeeping...and who was trained by another former volunteer who I had trained originally back in 2003. It made me feel that my efforts have been

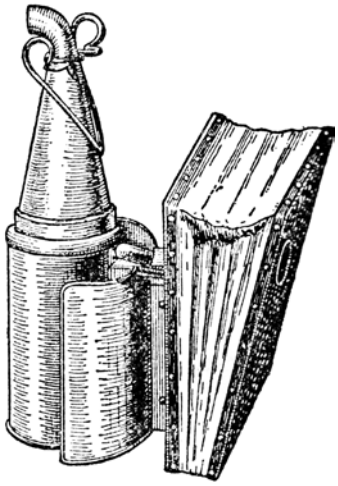
meaningful and have helped to nurture the next generation of beekeepers. You can read more about her project in next month's Meet the Beekeeper segment.

They say that spring will come in like a lion and exit like a lamb. It seems though that the lion continues to roar for a bit.

So what is left for this month? Well, be sure to visit the Bee Informed Partnership website and take their online hive survey. Sharing your experience and hive management can really help to better understand what is happening on a regional and national scale. The survey is open through April 30th so grab a cup of your favorite beverage and take a little time to sip and participate in the survey.

Despite the busy and seemingly frantic spring weather, remember to keep your veils tucked in and your smokers stoked. The bees may take a little time getting into their groove. As their keepers, best to be prepared at the ready, steady, go!

Ready, Set, Bloom!
Melanie Kirby



Q&A

Questions & Answers

by Dennis Brown

Hi Dennis,
Maybe you can help me with something. I've tried putting out a swarm box for the past two years without any luck. I currently have four hives and I know that at least two of them have swarmed in the past two years, but they don't go inside the swarm box that I have provided. What am I doing wrong?
Thanks in advance. Sherri

Hello Sherri,
What are you using for a swarm box?

Hey Dennis,
I'm using a nuc box that I received when I ordered my bees from the breeder.

Sherri,
You should be using a brood box with a solid bottom board. The brood box should be a used one so that the odor from the previous bees has permeated the box. If you don't have a used box, then order swarm lure spray from Kelley Beekeeping, Item # 8912. Do not spray more than twice on the inside of the top cover. Any more, and it will actually act as a repellent and you will miss another swarm season. I recommend using one plastic foundation inside the swarm box set in the middle. The swarm will start working this frame first instead of making their own comb and attaching it to the sides of the box. You need to **"check your swarm box daily "**otherwise the bees will start attaching their comb to the box. Once you capture a swarm, you should immediately move the box to a permeant location, remove the solid bottom and replace it with a screen bottom from Kelley Item # 57A. Then add nine more frames. I prefer to use pure bees wax instead of the plastic. I use the one plastic frame in a swarm box because it allows the bees something to start on and I never have any trouble with mice chewing like they would on a wax foundation. You should use an entrance reducer from Kelley Item # 55-NA.

A swarm will send out scouts to locate a new home. The scouts are looking for a home that will accommodate the colony for future use. A nuc box doesn't fill that requirement. Typically, the scouts will move-on to a larger space. (Like a brood box.) Sometimes you may capture a swarm in a nuc box, but it will be a smaller swarm that may occupy it. You should place your swarm box between six and ten feet off the ground. Place it in a shady spot that will make it easy for you to relocate it. I hope this helps you.

Enjoy your bees!
Dennis

Dennis Brown is the author of "Beekeeping: A Personal Journey" and "Beekeeping: Questions and Answers."
Contact Dennis at: www.lonestarfarms.net.

Bee Science (Continued)

ingested toxic residues," said Waled Suliman, a postdoctoral research associate in WSU's Department of Biological Systems Engineering.

The product, a powder, can be incorporated into a sugar solution that's fed to bee colonies. Each microparticle is the size and shape of a grain of pollen, making them easily digestible for bees. And they're specially designed and formulated to be safe for beekeepers to handle.

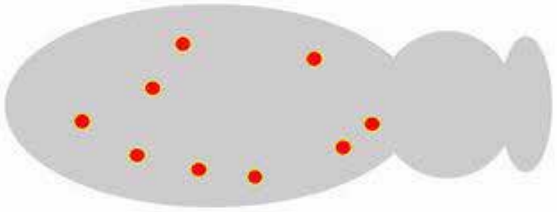
Undergraduate innovation nets $20,000

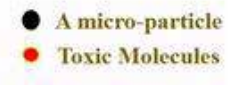
Recently, a group named BeeToxx — comprised of undergraduate students mentored by Suliman, WSU's Derick Jiwan, and others — won second place in the Alaska Airlines Environmental Innovation Challenge, taking home a $10,000 prize and beating out 22 other teams. The students had the opportunity to work on a real world problem that goes beyond what they learn in classes, Suliman said.

The product, a powder, can be incorporated into a sugar solution that's fed to bee colonies. Each microparticle is the size and shape of a grain of pollen, making them easily digestible for bees. And they're specially designed and formulated to be safe for beekeepers to handle.

This winter, the team involved was one of four to win the Honey Bee Health Coalition's Bee Nutrition Challenge and also received a $10,000 prize. Their proposal was chosen from among 20 submitted, with only four prize-winners.

"We're really proud to get noticed for the work we've done so far," Suliman said. "And this will help us keep testing and refining the product."





Just passin' through

When consumed by the bees, the particles attract and absorb pesticide toxins. Then, they pass through the bees like any other food. Each particle only spends a few hours in their digestive system, which is enough to significantly reduce pesticide residues.

In fact, each particle of Suliman's technology can remove about 300 nanograms of pesticide residue — much more than bees can survive.

Last summer, to test this new product, Suliman and assistant professor of entomology and manager of the WSU bee program Brandon Hopkins fed around 6,000 bees the microparticles in a sugar solution. Then they tested feces from those bees and found it contained the microparticles. In addition, the bees colonies remained healthy, showing that the microparticles don't harm bees.

Measuring toxin attraction

This summer, they will test just how well the particles attract toxins in the bees'

Bee Science (Continued)

bodies by collecting the microparticles after they've been through the bees and measuring them.

"We're really lucky that bees have fairly simple digestive systems," Suliman said. "Our material is specifically designed to work only on pesticide residues and only at a certain pH level and temperature. So the micro-particles won't absorb amino acids or anything else a honey bee eats."

Since they're still collecting data, the material isn't yet available to beekeepers. But Suliman is hoping to have the product on the market in the next two years.

"We have proof of concept," he said. "Ultimately, our goal is to lessen the economic impact of bee decline not only for beekeepers but also for farmers and food prices."

Contact: Waled Suliman, postdoctoral research associate, WSU's Department of Biological Systems Engineering, 509-335-7950, walidsalem77@wsu.edu

Reprinted from: https://news.wsu.edu/2018/04/09/microparticles-absorb-pesticide-save-honey-bees/

Bee Health

Bee Informed Partnership Survey

Our survey and a lovely coffee always go hand-in-hand! You're busy! We know that. You're out catching swarms, picking up packages, and checking your colonies!

So grab a coffee or tea, sit down, relax, AND ...take the Survey Today!

The information that you provide will be invaluable to our understanding of honey bee health around the country. As background, the BIP's National Loss Survey was launched for the first time in 2006, and thanks to the many thousands of beekeepers who have participated since then, we have been able to document and better understand long-term honey bee colony loss trends.

In 2010, BIP's National Management Survey was added to help us understand how management practices are potentially linked to colony survivorship. Thanks to your answers, we have been able to develop a dynamic management data tool. Feel free to play around with the interface. Want to know how colony losses compared between beekeepers that DID or DID NOT use a varroa treatment? Or what about the average age of comb in colonies? It's all there! This year, our colleagues at Auburn University in Sweet Home Alabama have coordinated the survey. We're really happy to have them on board!Please help us to develop more helpful tools for you by clicking the link below to take this years' National Colony Loss and Management Survey.

Older comb is usually darker than younger comb, and may contain higher levels of pesticide residues and parasites such as spores of Nosema. Take the survey now!

If you would like to prepare yourself for our questions, or want to take some notes while you're looking at your colonies, download this PDF to have a look at the 2017 – 2018 National Colony Loss and Management Survey Preview. Note that this preview should serve as an aid to the questions that are asked on the survey. Please, do not mail this preview version back to us. Please take the online survey! Due date is April 30, 2018.

Many thanks to all previous participants, and to all new-Bees for taking time out of your busy schedule to fill out this year's survey.

Your contribution is supporting research efforts at a national scale that are aimed to promote the health of our honey bees!

https://26.selectsurvey.net/beeinformed/TakeSurvey.aspx?SurveyID=LMS2018#

BEE INFORMED ®

CALL FOR PHOTOS!

Want to see your bee-related photo on the cover of the Kelley Beekeeping newsletter?

Send high res photos to:
editor@kelleybees.com

Thinking Outside the Box

TV Review ROTTEN

by Bella Donna

If anyone has access to Netflix, I encourage you to watch the documentary series called, "ROTTEN." The first episode is about honey. It presents a straightforward explanation on the consequences that are created with the demand for honey exceeding the supply around the world in recent years. According to the research in the movie, this is what we are all dealing with as honey consumers and beekeepers, to greater or lesser degrees. If you can't watch the movie, here are the highlighted facts:

- Honey has the greatest cachet in the marketplace of all foods. Nothing else has that rating.
- The supply cannot meet the demand.
- Bees don't bounce back anymore.
- For more than a decade, bees around the world have been dying in record numbers.
- Today, scientists believe the bees are dying from a combination of stresses.
- The amount of honey that bees make keeps dropping.
- It's not just the bees, but also the beekeepers who are struggling to stay alive (financially).
- The crazy thing is, the honey business is actually booming. Everyone is eating more honey.
- For almost a decade, worldwide honey consumption has been rising by more than 40 million pounds a year. The U.S. is responsible for more than half of that. The crunch in availability doesn't make sense with the math of what is actually available.
- Honey consumption is increasing for two reasons: population is growing, and the name 'honey' is an added value.
- American hives produce about 160 million pounds of honey a year. But we eat 450 million pounds a year. Thus the U.S. imports twice as much honey as it produces.
- The number of hives in the world is growing but honey exports are rising about 8 times faster.
- Production is decreasing and demand is increasing so the only way to explain that gap is honey adulteration.
- The world's hungriest honey importer is the U.S.

I think the awareness of this should make us all want to think of the impact this has on our lives and livelihoods. The bottom line for me - as a beekeeper and a holistic healthcare practitioner, is that the situation is causing a squeeze on the availability of 'real' honey for clients' health and wellbeing, as well as my own. How will you be impacted?

Bee Thinking About

The New *Our Farms, Our Future* Podcast Series: Voices in Sustainable Agriculture

From coast to coast, a diverse community of farmers, ranchers, scientists and educators is working to shape a sustainable future for our food system. Listen to the new Our Farms, Our Future podcast series and join this community for intimate conversations about the state of agriculture, how we got here and where we're headed.

Episode 1, released today, features Missouri farmers and neighbors Emily Wright and Dan Kuebler. They talk about what motivates them to be farmers and to build resilient farming systems, how local food systems can foster community, and the ways that beginning farmers can succeed.

"One of the things I love most about farming is the learning curve," Wright says. "It's a complex ecological system and you can never account for all the variables that are part of that system. So really the learning curve never drops off, and for me there's never a dull moment."

The Our Farms, Our Future podcast series will feature a new episode every two weeks for up to 25 weeks. It will bring together a wide variety of farmers, ranchers and others in the sustainable agriculture community to discuss such topics as federal policy, soil health, the role of business in sustainable food systems, water issues, climate challenges, women in agriculture, issues and opportunities for minorities and much more.

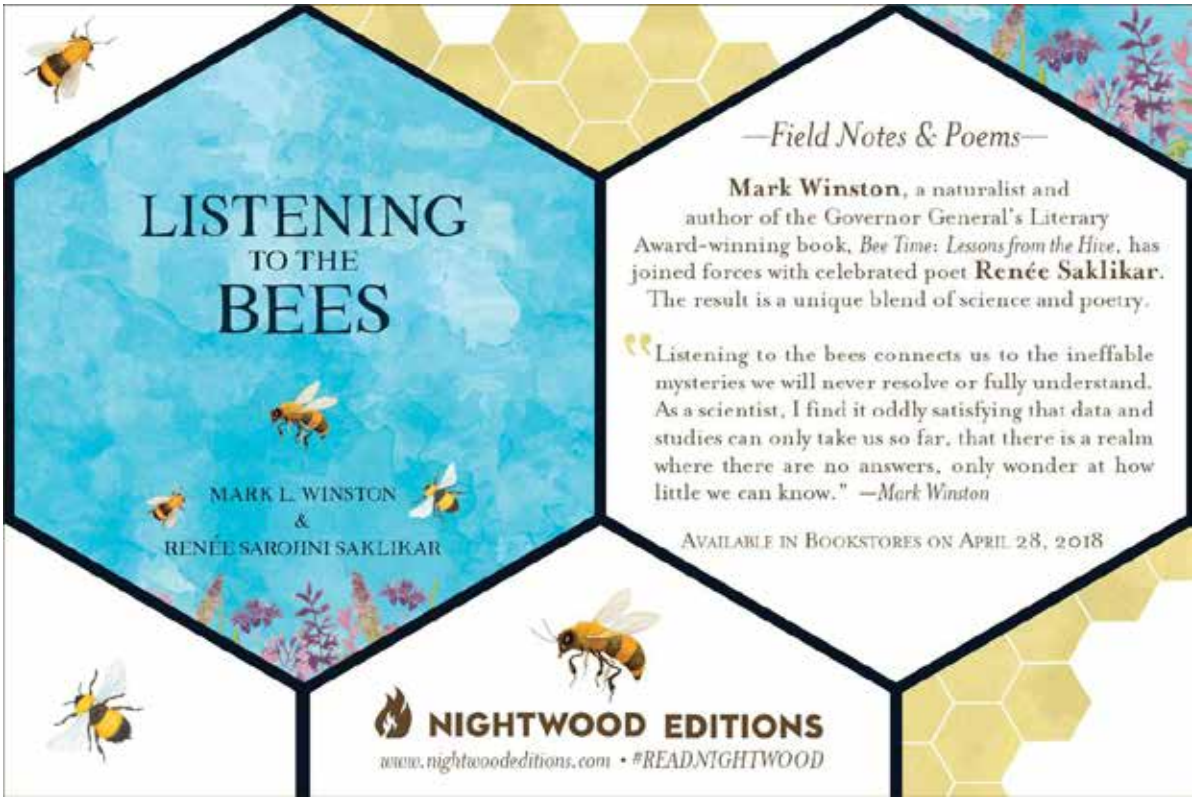
Episode 2 will feature Greg Judy, a veteran pasture-based livestock farmer, and Adam Saunders, founder of the Columbia Center for Urban Agriculture in Columbia, Mo.

You can follow this series at www.sare.org/OFOFpodcast or by subscribing on iTunes or Stitcher.

Bee Arts

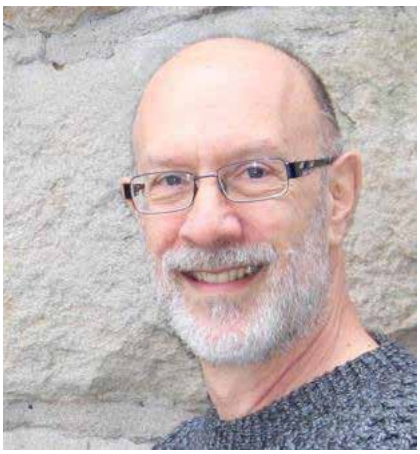
Listening to the Bees

by Mark Winston



Mark L. Winston is the recipient of the 2015 Governor General's Literary Award for Nonfiction for his book *Bee Time: Lessons From the Hive.* One of the world's leading experts on bees and pollination, Dr. Winston is also an internationally recognized researcher, teacher and writer. He directed Simon Fraser University's Centre for Dialogue for 12 years, where he founded the Centre's Semester in Dialogue, a program that creates leadership development opportunities that equip and empower students contribution to social change in communities.

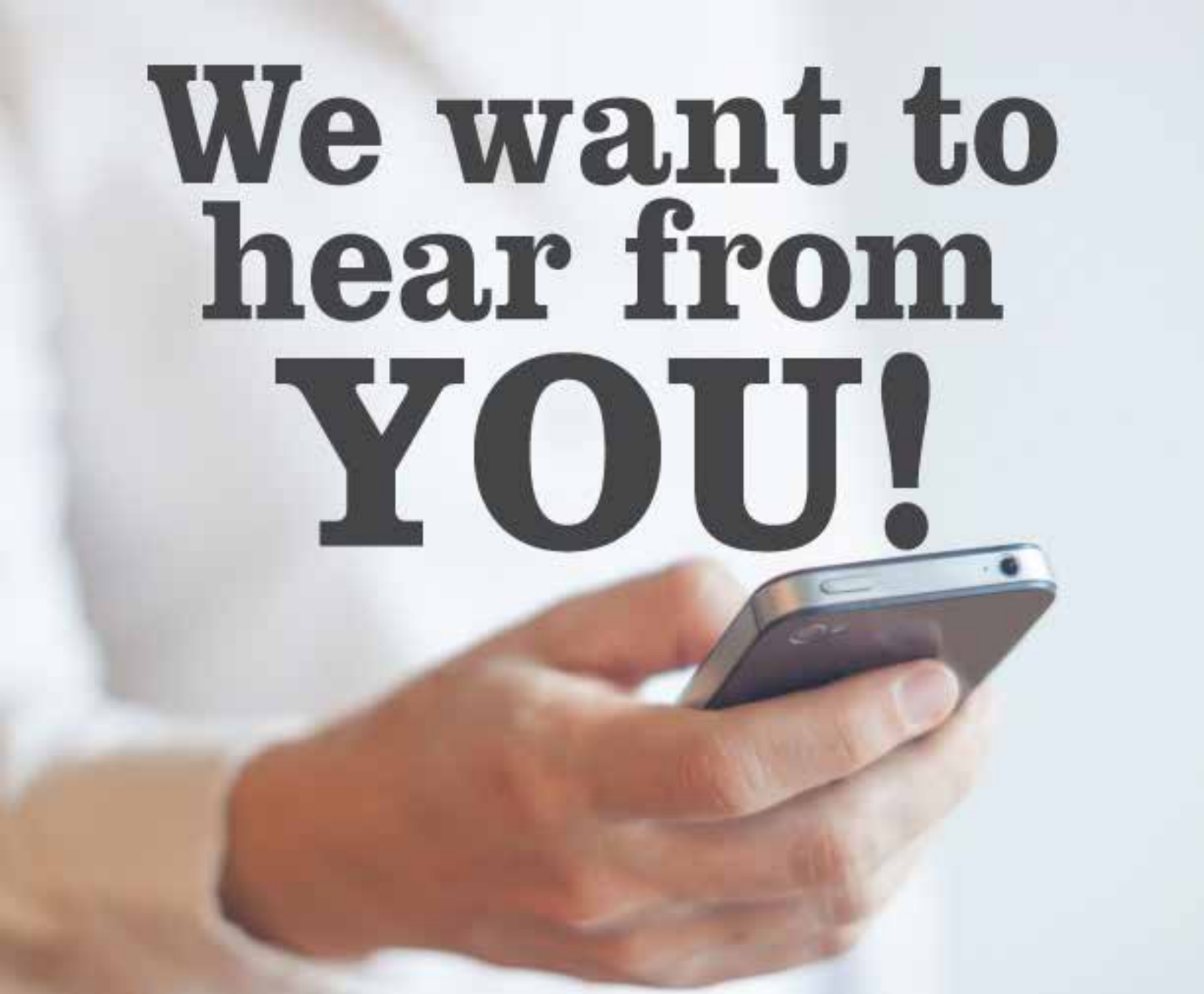
He currently is a Professor and Senior Fellow in Simon Fraser University's Centre for Dialogue, and a Professor of Biological Sciences.



For more info on Dr. Winston, visit:
PolliNation Podcast, Oregon State University: Interviewed by Andony Melathopolous about bees, communication and books

The Audiobook version of his previous book, *Bee Time*, is now available from Audible.

We want to hear from YOU!



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Conferences & Festivals

Bee Part of the Buzz

The California Honey Festival: Sat., May 5th

The first festival in 2017 drew in a crowd of 20,000 people...

One of the most popular attractions was the special life-sized, 7-foot, honey wheel that features several honeys, each paired with their unique flavor and aroma identifiers --a 4-D honey experience!

UC Davis puts on a bigger and better show this year

This year's main speaker stage is sponsored by UC Davis in the Honey Lab.

UC Davis Presentation Schedule—Saturday, May 5th.

10:00 a.m.: California Honey Festival opens
10:30 a.m.: Gene Brandi, Past President, American Beekeeping Federation
11:15 a.m. Elina Niño, Extension Apiculturist, Entomology and Nematology, UC Davis
12:15 p.m. James E. Sherman, Chief Operating Officer, Pollinator Partnership
1:15 p.m. Frank Golbeck, CEO, Golden Coast Mead
2:15 p.m. John Mola, Winner of 2018 Bee Symposium Graduate Poster Contest
2:45 p.m. Kate Frey, Ecological Garden Designer and Consultant, Columnist, and co-author with Gretchen LeBuhn of The Bee-Friendly Garden
3:45 p.m. Billy Synk, Director of Pollination Programs, Project Apis m.

WSU Bee Lab presents:

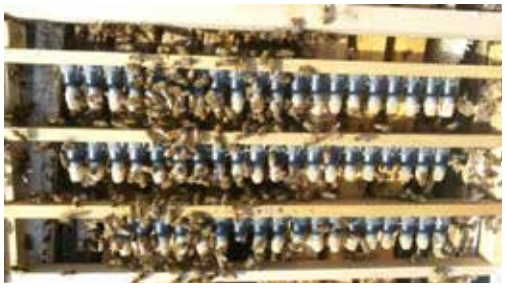
Queen Rearing & Introduction to Bee Breeding

June 15-16, 2018

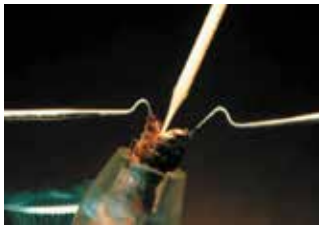
Ready to take beekeeping to the next level?

For those of you who already have a working foundation in beekeeping, the WSU bee team is offering an event to introduce you to fundamental tools for stock improvement.

Through a combination of presentations and hands-on demonstrations, this workshop is designed to improve your understanding of:



- **Queen Rearing**
- **Bee Breeding Systems**
- **Selection Methods**



We will also introduce you to the advanced techniques of instrumental insemination and cryopreservation.

Instructors:

Susan Cobey
Jennifer Han
Nick Naeger
Brandon Hopkins
Tim Lawrence
Melanie Kirby
Steve Sheppard

With special guest bee breeder *Gennaro Di Prisco* of Italy

Registration is $275/person
https://app.smartsheet.com/b/form/02420575d11d476d88252d9e90cec89f

Location: Washington State University- Pullman campus- Ensminger Pavillion
Questions? Call the WSU Department of Entomology at: ***Tel: 509-335-5422***

UPCOMING EVENTS

MAY 2018

Bee-Here-Now: Sustainable Beekeeping
Colorado: Tue, April 24 &Thu May 3, 2018
Info: www.bvsd.org/lll/Pages/default.aspx

Sullivan County Beekeepers Annual Seminar
New York: May 5, 2018
Contact: Don Bertholf, 845-807-1036

Capital Area Beekeepers Assoc. Short Course
Pennsylvania: May 5, 2018
Info: http://cabapa.org

Supering & Inspection Workshop
Connecticut: May 5, 2018
Info: http://ctbees.org

Rutger's Beyond the Basics
New Jersey: May 8-9, 2018
Info: www.cpe.rutgers.edu/courses/current/ae0403ca.html

Illinois Queen Initiative Queen Rearing Workshop
Chicago, Illinois: May 12, 2018
Info: www.illinoisqueeninitiative.com/iqi-classes/

Alternative & Sustainable Beekeeping
Michigan: May 20, 2018
Contact: jessica@stellerapiaries.com

JUNE 2018

Kelley Beekeeping Field Day
Kentucky: June 2, 2018
For more information, visit: http://kelleybees.com

We'd love to share news of your upcoming events. Please send the event name, date, website and/or contact information by the 10th of each month for inclusion in the following month's issue.
Email information to: Editor@KelleyBees.com

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CUSTOMER SERVICE HOURS:
Monday-Friday 7:00 am - 5pm CST
Saturday 7:30 am - 12:00 pm CST
**Phone lines are open every Saturday. Except for the months of October, November and December when we will only be open the first Saturday of each month.*