



# North Carolina **Bee Buzz**

The Official Magazine of the NCSBA

Summer 2022

**Feeding Pollen Patties  
Teaching Kids About Bees  
Summer Conference Info**





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Photo by Sharry Mikell

# North Carolina Bee Buzz Summer 2022



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## North Carolina State Beekeepers Association

~ Since 1917 ~

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On the Cover:  
Megan Davenport Brandenburg



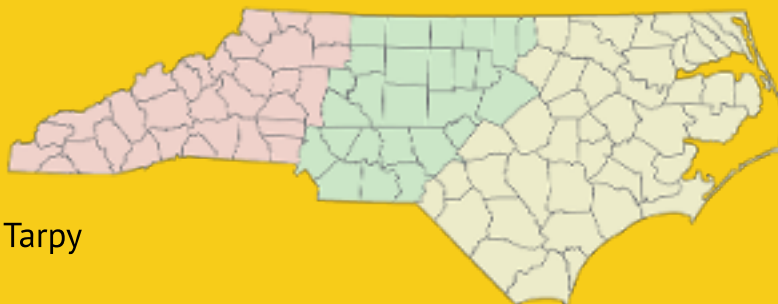
# North Carolina State Beekeepers Association



The mission of the NCSBA is to advance beekeeping in North Carolina through improved communication with members, improved education about beekeeping, and support of science enhancing the knowledge of beekeeping.

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## From the *Bee Buzz* Editors:

**Bee Buzz Story Submission Deadlines:** Spring : Jan 7 - Summer: Apr 21 - Fall: July 21 - Winter: Oct 21

We enthusiastically accept article and photo submissions! Please send us your articles and photos of news and information you'd like to share about your local association's latest events, successes and failures, a biography on a long-standing NCSBA member you would like to honor, or a young beekeeper you'd like to see highlighted. All honey bee-related topics will be considered for publication. While we regret that we cannot always include every submission, we will do our best to print as space permits. Submit your article in .doc or .docx format. Photos should be high quality jpg or tiff format. Please include a caption for photos. Do not embed captions in your photos or photos into your news article, but submit these as separate files. If you do not have access to a computer, we will accept typed or clearly handwritten articles. Mail written submissions to: *Bee Buzz* Submissions PO Box 1771 Pittsboro NC 27312.

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Jody Moore, *Technical Editor*  
[beebuzzeditor@ncbeekeepers.org](mailto:beebuzzeditor@ncbeekeepers.org)

Dr. Lane Kreitlow, *Content Editor*  
[beebuzzcontent@ncbeekeepers.org](mailto:beebuzzcontent@ncbeekeepers.org)





## Message From The President

by: Doug Vinson, NCSBA President

**It is hard to believe** that almost half of the year 2022 has already passed and with it some of the year's beekeeping major activities. Spring buildup, swarm season and much of the honey flow have come and gone. This is not to suggest a comfortable return to air conditioning and the recliner is next for you. Each segment of the beekeeping year brings a separate set of chores and challenges, and midsummer is no exception.

A welcome break from hot weather beekeeping could be attendance at the 2022 NCSBA Summer Conference at the Hickory Metro Convention Center in Hickory NC July 28-30, 2022. The conference is loaded with great presenters both main stage and breakout sessions. The lineup is outlined later in this issue. Other activities of special interest to be included are the honey show and contest, cooking with honey contest and an apiary for demonstrations by our inspector division. Information and rules for the contests are located on the NCSBA website. Also, our Born and Bred Program will offer a grafting workshop for those who have completed the classroom portion. An awards dinner is planned for Friday evening July 29th. Tickets will be available through the online preregistration process.

Speaking of conferences, the 2022 Spring Conference in New Bern was a great gathering of beekeepers ready to interact in genuine fellowship and gain new knowledge and experience. We learned a lot, had a lot of fun, and bought a lot of equipment! The extended vendor space is a terrific addition to the Center and was much appreciated by our vendors and vendor sponsors. Because of my involvement with past conferences, I have had the opportunity to review conference evaluation surveys and these conference survey answers and comments were especially positive and complimentary. Thanks to all who took time to complete a survey.

The result of an exciting response to a raffle for a five frame nuc (generously donated by Pop Pops Bees), assisted the NCSBA in being able to make a generous donation of \$5,000 to NCSU during their Day of Giving this spring. This gift will help to continue the momentum we have right now with the University and the Apiculture Program. We received a genuinely nice thank you from Chancellor Woodson.

To further our connect with NCSU and the College of Agriculture and Life Sciences, the NCSBA was represented at two CALS Strategic Planning meetings this year. Rick Coor attended the Raleigh session, and I attended the Kannapolis session.

Presentations at the BOD meeting in New Bern by Dr. Harry Daniels, Senior Associate Dean for Administration, CALS and Sterling Frierson, Senior

Director of Development, CALS outlined a tentative timeline for the proposed apiculture field lab at NCSU. As you read this, the university should be in contract negotiations for the building.

These presentations and subsequent discussions have unveiled another concept that may be just as important, or more so, than the building itself. An Endowed Professorship for the Extension Apiculturist would ensure that the Apiculture Program would exist for perpetuity. Without it, the University would be under no obligation to fill the position if it became vacated. Without an Extension Apiculturist, the lab could be repurposed, and our considerable efforts do not preserve their intended goal.

As an Association, this is an opportunity for us to assure future beekeepers and bee scientists that North Carolina will always have an Apiculture Program at NCSU. This is a lofty and expensive goal but one that we must consider.

It is so rewarding for me, and I hope for you, to see all our programs and functions returning to normal after the interruption of the pandemic. After several years of dedicated leadership to the Certified Honey Program, Ed Speer has stepped down as chairperson for that program. Debbie Griffith from Newland, NC has graciously assumed that position.

In addition to the allocation by the General Assembly for the field lab, \$150,000 was budgeted for Future Farmers of America programs to introduce high school FFA students to beekeeping. A selection process was initiated this spring to select FFA high school's programs for participation. Members Nancy Ruppert and Jim Burke represented the NCSBA on that selection team. Thank you!

In addition to the 2022 Summer Conference in Hickory plans are being made for future Conferences:

**Summer 2022**..... Hickory, NC July 28-30

**Spring 2023**..... Union County Ag Center, Monroe NC March 9-10

**Summer 2023**..... Blue Ridge CC, Hendersonville, NC July 13-15

**Spring 2024**..... New Bern Riverfront, March 7-9

\*BOD Fall Meeting 2022.....November 12, 2022, TBD

I do not say it often enough but thank you to every member of this great association. You are the reason we are considered a model state association! Those of us who interact with other state groups hear this repeatedly. The leadership teams who generously give of their time and energy make the whole thing work.

See you in Hickory!

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# BeeFeeders

## North Carolina Pollinator Plants

Guest Column by: Randall Austin, NC Master Beekeeper

*"Things are not always as they seem;  
the first appearance deceives many."  
— Phaedrus*

### What do honey bees eat?

Every beginner beekeeper knows that they only eat pollen and nectar from flowering plants. Every beekeeper who has done a little more studying knows that they also eat "honeydew" excreted by aphids and, when conditions warrant, their colony's own eggs and brood. Yuck. Pleasant thoughts only, please! Let's focus on pollen and nectar!

Our studious beekeeper also knows that bees, on a given flight, generally specialize in collecting either nectar or pollen, not both at once. They also know that some flowering plants only supply honey bees with nectar, some only with pollen and some with both. Oak trees, for example, provide lots of pollen but no nectar. Corn is another example of a pollen-only plant (its pollen is low in protein and isn't very good bee food, but bees often collect it anyway).

In contrast, sourwood is an example of a plant that produces copious nectar but relatively little pollen. This illustrates why the popular notion that pollen grains in honey can be used to identify and quantify the nectar sources that went into it isn't particularly reliable, or at least it isn't very accurate with regard to proportions. If a honey has half of its pollen grains coming from a particular plant, that does not, by any means, indicate that half of the nectar came from that plant.

However we do know that plants produce nectar to bribe insects, as well as other creatures, to enter their flowers and therefore transfer pollen from one flower to another. So pollen and nectar are associated with each other in a big-picture sense, even if that association isn't easily quantifiable. So if we see a particular type of pollen in a foraging honey bee's corbiculi, we know that plant's flowers are "open for business."

But which pollen comes from which plant? There are academic resources on-line that show electron microscopy images of pollen grains so that we can get a pretty good idea of the most likely identity of the pollen our bees are bringing in. But just between you

and me, I'm not going to go to all that effort to get scholarly-level precision. We can make a reasonable guess if we know the plants that are blooming in our area at a given time and know those plants' pollen colors.



Photo: John Rintoul

*Look carefully at the pollen in the bee's corbicula in the photo above. It obviously comes from aster, since the bee is working asters on this foraging trip.*



Photo: John Rintoul

*This bee is working cherry blossoms. Note the color of the pollen. It looks similar to the previous aster pollen. How can we tell the difference? Asters do not bloom at the same time as cherry trees! So we should not have any reason to confuse these two.*

The trick is that flower color typically doesn't have any relation to pollen color. Did you know that white poison ivy flowers produce red pollen? And red maple flowers yield khaki/putty-colored pollen. Yellow dandelions' pollen is a rich orange color. How can we know which pollen comes from which plant?

The best way is to pull up a chair in the garden and watch bees work the flowers. Honey bees have what is called "flower fidelity", meaning that on any given

foraging trip a bee will only forage on one type of flower. In other words, if squash and cucumbers are both blooming in the garden, a bee that is currently foraging on squash flowers will only have squash pollen in its corbiculi and one that is foraging on cucumbers will only have cucumber pollen.

To get more hints, visit the Wikipedia article [List of Pollen Sources](#). It has a chart, arranged by plant type and season, with many common pollen-producing plants. For each, the pollen color is both described and illustrated (for example, yellow). Notations include when the plant blooms; whether it is cultivated, feral or ornamental; and its value as a honey bee pollen source.

Two obvious but underappreciated clues as to what nectar plants your bees are foraging on are the color and taste of the honey. I once was given a jar of light-colored, fruity-tasting honey that was labeled “tulip poplar”; it wasn’t! Tulip poplar honey must be a rich amber color and it must taste like tulip poplar honey. Otherwise it isn’t from tulip poplars. Claiming that it is when it isn’t is either ignorance or fraud. Likewise, sourwood honey commands a premium price and, to no one’s surprise, is often falsely labeled.

What if we aren’t sure what the nectar source is? No problem: that’s what the phrase “wildflower” is for. It simply means either “this nectar came from a mix of flowers” or “I have no idea where the nectar came from”.

Customers often specifically request “wildflower honey”, perhaps because the blend of nectar sources in your area creates a delightful taste treat. So don’t shy from the “wildflower” label if it is appropriate. But more importantly, never defraud customers with a varietal attribution that is more wishful thinking than reality. As a group, we beekeepers work hard to push the message, “buy local from a trusted beekeeper”; please don’t destroy that image for everyone by using shady labeling!

What are your bees visiting? Where does your honey come from? We don’t have to guess: we can know! Take a walk around your neighborhood, watch bees on flowers and observe the pollen they are bringing home. To learn taste and color, make an effort to sample a variety of honeys from reliable sources. Doing so is not only educational, it is delicious!

*This article was originally published March 2019*  
[https://baileybeesupply.com/educational\\_resources/](https://baileybeesupply.com/educational_resources/)

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## In the Apiary: Summer 2022

by Jennifer Keller, NCSU Apiculture Research Technician

**At the time of this writing,** we are in the height of swarm season, which seems to be quite prolific this year. February had unseasonably warm temperatures, which led to early brood buildup with larger populations earlier in the year than normal. The cold snap and rainy period that followed forced the bees to remain cooped up and prevented beekeepers from working their bees for a period, resulting in overcrowded hives. As soon as the weather broke, swarming started, and has yet to slow down!

Beekeepers often frown upon swarming and feel ashamed to admit that their hive swarmed. It is true that when a colony swarms, over half the adult population departs with the queen, leaving vastly fewer foragers to collect the all-important nectar during the height of the honey flow. But while swarming derails productivity for the beekeeper, it is important to remember that swarming is a sign of a healthy colony. Swarming means that the colony made it through winter strong enough to build up and survive another season.

Swarming is the natural reproduction of a colony and greatly benefits the bees. Swarming forces a temporary break in the brood cycle, which may reduce the mite population and any brood diseases that may be present. Swarming also allows a colony to spread its DNA, which helps the species prosper.

Swarms are not always bad for the beekeeper. If you are successful at collecting a swarm that issued from one of your own hives, the swarm bees and the original colony will reap the same benefits of mite and disease reduction mentioned above. You have also increased the number of colonies in your apiary.

If you are successful at collecting a swarm that came from a colony outside of your apiary, it is like finding free bees! Unlike a package of bees, the queen and workers in a swarm are related, so there is no special introduction time needed therefore she can get to work immediately after the swarm is hived. It is important for the swarm to build up quickly and collect stores in preparation for winter, making this a good opportunity for the beekeeper to get foundation frames drawn out for later use. Although a swarm may not produce surplus honey the first year it is captured, if managed well throughout the season, it should be able to start out strong next spring with a good chance of producing surplus honey.

Understanding the population buildup cycle of a honey bee colony can be helpful in managing your apiary. Spring is the time when the colony's population peaks for the year. Strong colonies produce more honey, but they are also at greater risk of swarming. The challenge for beekeepers is to maintain a balance between a strong, productive colony and one that is overcrowded and may swarm. It is a fine line, and often beekeepers need to take actions to achieve this goal. Adding another box to the hive to provide more space may help stave off swarming. Making a split by pulling out brood frames is a common method of setting back the population of a colony to prevent or delay swarming. The brood frames can be placed in colonies with fewer bees or used to create a separate new colony.

Management techniques to deter swarming are worth the effort, as many times beekeepers are unable to successfully capture the swarms. However, keep in mind that swarming is a natural phenomenon, therefore efforts to prevent it may not always work!



Following a swarm, beekeepers have a few tasks to perform. For the hive that swarmed it is important to check back to ensure the hive requeened itself as expected. The process can take more than two weeks, so don't panic if you don't see eggs right away. If there is concern that there may not be a queen, a frame of eggs and young larvae from another colony may be placed inside the hive. If they are indeed queenless, they will begin raising queen cells. For the swarms that are hived up, along with verifying a laying queen, it may be necessary to supply extra feed to ensure their buildup and winter survival.

The other important event for this time of year is honey extraction. Honey supers should already be on the hives and the bees should be working hard to fill them up. In my area around Raleigh, there isn't much of a honey flow after June. It is at that time that I will check the supers and verify when the honey is ripe and ready to be pulled for extraction. Honey is considered 'ripe' when it is capped. If a super isn't quite all capped, I may leave it on the hive a little while longer. The general rule is that at least 75% of the super needs to be fully capped before it should be pulled for extraction. Alternately, you can pull individual honey frames that are at least 75% capped. If the honey supers or frames are pulled before the honey is ripe, the moisture content will be too high, and the extracted honey may ferment. By waiting until the frames are at least 75% capped, there is little chance that the extracted honey will spoil. Finally, we all know that it is hard to treat for Varroa mites during the honey flow when the bees are filling the supers. Once the honey supers have been removed from the hives, this is a great time to do a check of the Varroa populations in your hives to get a baseline count. It will be important to continue monitoring these levels throughout the rest of the season and to decide what course of action you will take if these numbers get too high. The Honey Bee Health Coalition (<https://honeybeehealthcoalition.org>) is an excellent resource with information on Varroa mite monitoring, management and general bee health.





## 4-H Grant Program Funds Still Available!

By Gary & Hilda Winebarger  
Co-Chairs, NCSBA 4-H Grant Program

Beekeeping is a continual learning, teaching, experience process. When my wife and I first started with honey bees, we only wanted a few colonies. As we gained knowledge and experience and became more involved with our bee association we saw the responsibility to share about beekeeping. Teaching at Bee School, presenting at school groups and events such as the local Science Center "Bug Day", library, county fair and even the tractor show at our local fairground have become a part of our beekeeping life. I say all of this to encourage each of you and your bee association to become involved in sharing the knowledge that you have.

At one of the early bee association meetings I attended there was a statement made by someone that the average age of a beekeeper was [from 55 to much older]. Look around at your next bee club meeting and you will most likely see this statement is true. This is why it is important for us to encourage young people to learn about honey bees. One way to do this is by teaching beekeeping to 4-H Clubs. If you have ever participated in a presentation to a school group, you know they are excited and very attentive to learning about honey bees, particularly if an observation hive is present.

The NCSBA can assist your chapter with a grant of up to \$500 through the 4-H Grant Program. As of this writing there are still funds available in the program. Details of the program and how to apply are available on the NCSBA website <https://www.ncbeekeepers.org/programs/4h>

For any chapters that have participated in beekeeping programs with 4-H Chapters, I encourage you to share your experiences on the NCSBA Facebook page so everyone can learn.

Contact Gary & Hilda Winebarger, Co-Chairs, NCSBA 4-H Grant Program at: [4h@ncbeekeepers.org](mailto:4h@ncbeekeepers.org)



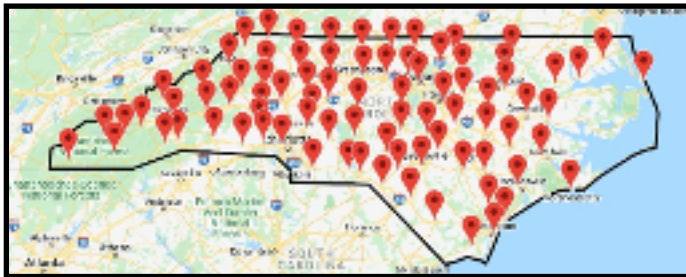




# Master Beekeeper Program: Chapter Bee Schools: The Cornerstone of the Master Beekeeper Program

by Randall Austin MBP Co-Chair

**The NCSBA Chapters** are on the front lines of the Master Beekeeper Program, and they've been busy with local Bee Schools this spring. Around 30 chapters have administered the Certified Written Test to their bee school students so far this year. If your chapter is one of them, please take time to thank your Education Director and MBP Coordinator. As someone who fills both those roles for my local chapter, I can assure you that they are at least a half-time job during bee school season, and a sincere "thanks" is the only payment that we get. Don't like the job they are doing? Instead of calling to complain, why don't you call to volunteer to help?



**NCSBA Local Chapters**

Thirty Chapter Bee Schools certainly demonstrates that NCSBA is reaching out to North Carolina beekeepers. But NCSBA has 83 chapters. Granted, some chapters don't conduct schools every year; there are those who alternate every other year, for example. However, if your chapter doesn't host a bee school or hasn't done so in many years, you should consider it. A few reasons are:

1. Bee schools are proven to significantly boost chapter membership numbers. If your membership is limping along with little if any "new blood", a bee school may be the answer.
2. Bee schools provide a significant source of revenue for a chapter. At my chapter, our modest bee school tuition provides over twice the net revenue every year that membership dues bring in. We believe that students get far more out of the experience when they have invested something into it, so we don't apologize for charging a fee that is consistent with what other schools in our region charge. The amount we charge also motivates us to provide what we consider to be the very best instructors and very best bee school experience in our area. People will pay for quality. We donate most of the excess booty to the NCSU Apiculture Fund.
3. For me personally, my biggest motivation for supporting my chapter's education efforts is that honey

bees fly. Ignorant new beekeepers with a kit from a Big Box Store and over-priced bees mail-ordered from an on-line supplier do not know how to keep bees healthy, or even that they need to do so. Their dwindling, virus-laden, pest-infested colonies get robbed out by my healthy, vigorous colonies, leaving me a big mess to clean up in late summer and fall. A win-win solution is for my chapter to engage with those know-nothings to educate and mentor them so that they aren't the proverbial bad apple that spoils the barrel.

4. It isn't just the brand-new beekeepers who need bee school. Those who have been at it for two or three years are probably the ones who benefit most. They are the ones who know they have problems and are seeking the best solutions. Don't abandon them to YouTube self-proclaimed experts! Bring in experienced, knowledgeable instructors who will give them what they need to succeed.



If your chapter recognizes the wisdom of hosting a bee school but doesn't know where to start, talk with your NCDA&CS Apiary Inspector. Part of his/her mission is educating beekeepers. They would love to help you plan a bee school and would likely volunteer to teach as needed. Also, contact chapters in your region who have successful schools and ask for any and all help you can get. Chapters who are proud of their schools should be eager to share their formula for success, as well as instructors. If the ones near you aren't helpful, there are plenty of others in the state with outstanding reputations.

Interested? Now is the time to start planning for next year. See the sample curriculum and other helpful information on the MBP section of the NCSBA website and contact the MBP Committee with any questions or for advice. Our goal is for you to succeed!



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# Wolfpack's Waggle: *Nosema* is now *Vairimorpha* Time to Update Your Slides for Bee School!

by Dr. David Tarpy NC State Extension Apiculturist



NORTH CAROLINA STATE UNIVERSITY  
**APICULTURE PROGRAM**

**Sometimes** in the huge, complicated tree of life, twigs can get twisted around...

The naming of species seems simple, but it can be complicated. It's critically important to have a common nomenclature so that we can understand the subtleties in biology, especially when very similar life forms are very different from each other. The standard binomial taxonomy (Genus, species) was started by the Swedish scientist Carl Linnaeus way back in the 18th Century, and ever since we have been able to catalog life more easily on Earth.

Honey bees are of the genus *Apis*, which is Latin for "bee," and there are nine recognized species. All but one is native to southeast Asia, but the Western honey bee (*Apis mellifera*) is indigenous to Europe and Africa. The species name *mellifera* is Latin for "honey bearer" or "honey maker," which seems quite apt.

Of course, all the parasites, pathogens, and pests of honey bees have their own taxonomic genus and species names. We have *Paenibacillus larvae* for American foulbrood, *Aethina tumida* for Small Hive Beetles, and *Ursus americanus* for the black bear. Perhaps the most easily remembered is also the most economically important parasite, the *Varroa destructor* mite. Interestingly, when the mites were first introduced to our species of honey bee, *Varroa destructor* was first called *Varroa jacobsonii*. If you go to the scientific literature or the beekeeping trade magazines in the early days of Varroa, you will see it being called by the wrong species name. Once biologists realized that the new invader was a different species of mite, we had to update our terminology accordingly. Besides, "*destructor*" certainly seems much more apt for such a devastating parasite!

Well, taxonomists have gone and done it again. This time, it's for the microsporidian gut parasite *Nosema*, which can cause bees to become constipated and defecate in or on the hive (further spreading it within and among colonies). The story of *Nosema* already has its own complication, in that the "original" species of *Nosema* was *Nosema apis*. However, just like Varroa was introduced from another honey bee species, *Nosema ceranae* is the "new" species of *Nosema* that has all but replaced the old species of *Nosema* over the last two decades. Now, a new paper by Tokarev and colleagues have reclassified the genus, so that ***Nosema* should now be referred to as *Vairimorpha***.

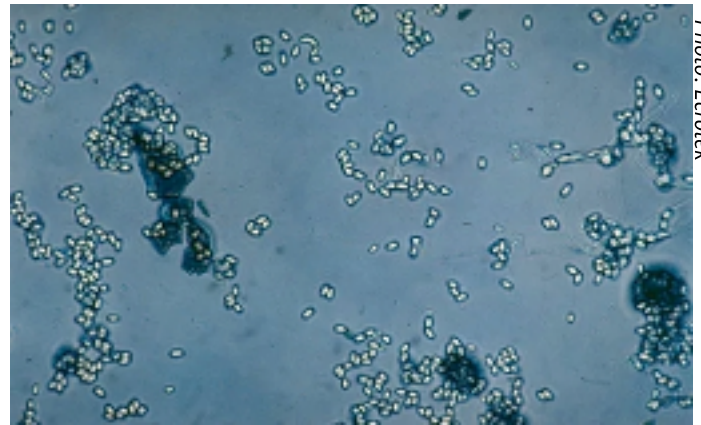


Photo: Ecrottek

***Vairimorpha* Spores (Formerly *Nosema*)**

So, from now on—or at least until the taxonomists decide otherwise—we should be calling the gut parasites *Vairimorpha apis* and *Vairimorpha ceranae* (rather than *Nosema apis* and *N. ceranae*). Luckily, other than having to update your slides on diseases for your introductory bee school, you don't have to do anything different as a beekeeper. Just keep your colonies strong, monitor for the bees having distended abdomens and inability to fly, and use fumagillin antibiotic in their sugar syrup if you'd like to actively cleanse them of the infection.



**Proposed NCSU Apiculture Bee Lab**

And just a quick note on an update for a new field apiculture building at NC State. The architects in University Facilities have advertised the work project and are actively soliciting bids. We have received nine so far, many of them looking very strong. At some point early this summer, they will invite several of the top applicants to present their vision and design. A committee will then select a final firm to fully design and implement the project, which they anticipate will take about a year to complete. We will certainly keep you posted, and thanks again to everyone involved in getting things to this point!



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# Teaching Kids About Honey Bees

by Randall Austin NC Master Beekeeper & MBP Co-Chair

**As a Master Beekeeper,** I have taken on an obligation to educate others about our hobby, and I get the opportunity to do so many times every year. Chances are that once The Public finds out that you are a beekeeper, people will begin beating a path to your door too, looking for somebody to speak to their garden club or child's elementary school. I encourage you to explore that kind of thing, because in my experience, the best way to learn is to teach. Get in touch with your local beekeepers' association's Outreach Director to volunteer.

My audiences fall into two broad categories: 1) people who are interested in taking up beekeeping or have already done so; and 2) people who have a general interest in what is a strange and fascinating activity. The two groups are focused on different aspects of the beekeeping topic and my pitch to each must be tailored to what will provide that group with what they are seeking. Usually kids fall into the second, non-beekeeper group.

The non-beekeeper group doesn't need to know anything at all about things like Varroa treatments, methods for clearing supers, product labeling requirements and so forth. Nor do they need to know about the traits of different bee races or the architecture of modern hive variants. Their curiosity is sated by a few basic points:

1. Honey bees are not the same thing as yellow jackets.
2. Honey comes from plants (nectar). Honey bees are just little factory workers that convert the nectar into honey. As such, there is no such thing as "generic honey"; instead, there is tupelo honey, sourwood honey, clover honey etc., just as there is grape jam, strawberry jam, apple jam etc. depending on the plant source. (I've encountered lots of people who think honey comes from pollen, or that bees somehow "produce" honey similar to how chickens produce eggs or cows produce milk.)
3. Despite what the newspapers say, honey bees are not on the verge of extinction. Our county/state/nation/world has lots of beekeepers and lots of honey bee colonies. Responsible beekeepers take good care of their colonies and they are doing just fine, on average.
4. There is more to beekeeping than collecting honey. Pollination is far more valuable than honey. We

wouldn't starve without honey bees but our diets would be a lot less tasty. Do you like almonds, pickles, blueberries or apples? If so, give a honey bee a hug!



*"In school": A future beekeeper dons protective gear while his classmates gleefully watch.*

## A few guiding principles

I like sharing with kids but they can be a lot more challenging than adults. Presentations for kids certainly require more creativity and props than those given to adults. That isn't to say adults don't appreciate creativity and props, but they'll let you get away without them. Kids won't.

Some teaching tips that have helped me over the years are:

1. Make sessions age-appropriate, especially with respect to time. In the younger grades, most classroom teachers don't want lessons that take more than 20 minutes. It can be a challenge to squeeze everything in that you want to share, so don't do it. Cut stuff out, saving it for another day.
2. Along those same lines, focus only on one or two main messages, particularly for the younger kids. This isn't the only lesson on honey bees that they'll ever get in their whole lives; leave them wanting more.
3. Give kids the same intellectual respect that you would give adults. That doesn't mean I bring up Chinese trade tariffs when speaking to 3rd graders, but it does mean that everybody gets the straight truth as I know it. Kids get a lot of honey bee education in school and on television these days and they know a great deal about them. I don't have to dumb down any aspect of beekeeping or honey bee biology with school-age

kids.

4. Kids like active/hands-on stuff. Include interactive activities where kids must get out of their chairs and move around.

5. Don't mindlessly parrot bull-poop from internet activist sites. Use the time to educate with fundamental facts, not indoctrinate with agenda-serving myths. Honey bees are not dying out, our food supply is not in jeopardy, pesticides are not wiping out honey bees. There is plenty of fascinating true stuff to talk about without all that nonsense.

### My go-to toolbox for teaching kids

I have a grab-bag of teaching modules that I can assemble into school presentations as the circumstances and my mood dictate. Feel free to use these as you share with kids.

#### Honey bee basics

A. Honey bees aren't yellow jackets!

1. They are very fuzzy, not shiny (illustrate with large photos/posters)
2. They are not shaped like Barbie (not waspish)
- 3 They are not bright yellow
4. Honey bees can only sting people once and they don't bite. Not so for yellow jackets. Also, honey bees leave their stinger in your skin when they sting. If you are stung by an insect and there isn't a stinger, then it most likely wasn't a honey bee that did it!
5. Honey bees only eat nectar (or honey) and pollen. Yellow jackets eat nectar, pollen and meat.

B. Honey is made from nectar that the bees bring back to the hive from flowers. Flowers produce nectar to bribe honey bees and other pollinators to visit the flower and, in doing so, the pollinator will also accidentally transfer pollen from one flower to another. Honey bees dry the nectar so that it doesn't spoil over winter.

C. There are three different types of honey bees (illustrate with large photos/posters). Each has a very different role and they all work together in a complex society.

1. Workers
2. Queen
3. Drones

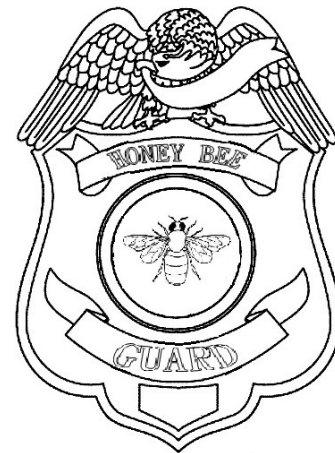
#### Active lessons

##### Roles of bees in the hive

Choose children to represent each role, providing

them with the props indicated. For workers, assign roles only to girls, according to their ages, starting with the youngest for housekeepers and progressing in age through the list of tasks. The oldest girls will be foragers.

1. The queen lays eggs (plastic Easter eggs)
2. Workers:
  - a) Housekeepers (whisk brooms)
  - b) Nurse bees (baby dolls)
  - c) Wax-builders (hammers/screw drivers)
  - d) Guards (police badges)
  - e) Foragers (baskets/buckets)
3. Drones (boys) just stand around saying things to the queen like, "Want to go on a date?" Mention that they are playboys and don't have stingers.



***"Guard bee badge": Every self-respecting guard bee needs a badge!***

#### The bee dance

1. Honey bees do a dance to convey information about the location of food sources
2. They orient based on the position of the sun
3. The straight run portion of the figure-8 dance (the waggle dance) is in the relative direction of the food source. It is based on the angle of sun, where straight up is the position of the sun.
4. Smell is very important too

Get the kids to dance along with you as you perform the waggle dance. For extra points, you can play "The Chicken Dance" music as you sing the following:

*I am a honey bee*

*Won't you come along with me?*

*And get some food ---*



*(Clap clap clap clap)*

Waggle your waggle-end during the clapping part.

For even more fun, instead of singing “And get some food”, have the kids say their favorite food, e.g., “And get some pizza.” Different kids can say different things (pizza, ice cream, hamburgers, etc.). When two kids notice that they are saying the same favorite, they can form a conga line together as they dance. This gets longer and longer as more kids agree with their favorite. Explain that honey bees recruit other foragers to their favorite food source in a similar fashion.

### **How beekeeping works**

1. Dress up a kid in veil, suit (the baggier the better) and gloves. Let her/him pump a smoker (not lit!).
2. Have a box with frames, bottom board and cover. A nuc box works great for this. Open it up to show what is inside. This doesn't have to be elaborate or time-consuming. Simply pulling out a frame illuminates what was previously a mysterious “black box.” If you've ever seen “Bee Movie” you know that Normal People, especially Hollywood writers, have no idea whatsoever what the inside of a hive looks like!
3. Describe how the wax caps are cut off of comb, the frames are placed in an extractor and spun. Pictures will suffice.

### ***“Where Does Honey Come From?” game***

A few years ago, my friend Mary Dietz and I were asked to talk about honey bees at the Person County Fifth-Grade Ag Day. There were about a half-dozen “stations” set up in Roxboro's Huck Sansbury Park, each dealing with some aspect of local agriculture (dairy farming, vegetable gardening, etc.). All of the county's fifth-graders rotated with their classes from station to station. The time allowed at each station was only ten minutes and was strictly enforced since a delay at one station impacted all of the others.

Those who know me will confirm that I cannot even introduce myself in only ten minutes. But we needed a meaningful, engaging activity that could be conducted in the time allowed. The solution was my “Where Does Honey Come From?” game.

I found seven pictures to represent steps in the creation of honey. I printed and laminated each of the following pictures on large cardstock paper:

1. A tulip poplar flower
2. A honey bee using its proboscis to slurp up nectar
3. Honey bees depositing nectar into honey comb cells
4. A honey bee frantically fanning

5. Beautiful, full frames of capped honey

6. An extractor

7. A jar with golden, delicious honey

The pictures were shuffled. Seven kids were chosen to be in charge of the seven pictures. The rest of the class had to arrange the seven kids in the correct order, from the beginning to the end. As each step was put in its proper place, we explained what happens at that point.

This activity can work for any age, even adults. You'd be surprised by how many grown-ups do not understand that honey comes from nectar, not pollen, and that the bees add enzymes and dehydrate it. We explained that the reason bees do this is that they are among the few insects that do not die out in the fall or hibernate over winter, so they must store away food in a manner such that it won't spoil. (The fact that honey doesn't spoil is news to most folks too.) Fortunately, honey bees store much more food than they can use so humans harvest the surplus.

### ***Demonstration hives***

Teachers often request live bees for a presentation. But be warned: in a classroom setting, a demonstration hive can be extremely distracting. If you do take one, keep it covered and out of sight until the very end of the session. Then insist that the children file by in an orderly fashion to view it. Pushing and shoving can quickly become a concern. That's why I have decided that observation hives work best in one-on-one settings like the Honey Bee Information Booth at the NC State Fair, not chaotic, large-crowd situations like a school classroom.



***“Bee display”:*** *Demonstration hives are a great tool but work best in one-on-one or few-on-one settings, not large classrooms.*

I have a very nice homemade demonstration hive that I have taken to schools, fairs, Vacation Bible Schools, even the NC Zoo before the permanent exhibit was constructed. A few tips that I've learned that make using it easier include:

1. Select the frame(s) that will be in the hive the day before you need it. Frames with the classic bands of honey, pollen and brood of all ages are ideal.
2. Similarly, if you plan to include the queen, find her the day before. Place a queen excluder over the top-most box of her hive. Set an empty box over the excluder. Put in two or three frames, including the frame(s) you intend to use in the demonstration hive, along with the queen. Now if you must be at the school by 8:00 a.m., you can wait until morning to assemble the demonstration hive since it will only take a few minutes to do so. This reduces stress on everybody involved: the queen, the bees and the beekeeper.
3. Do not pack the demonstration hive full of bees. Too many bees will obscure what is going on underneath them. Viewers won't be able to see larva etc. because bees will be in the way.

4. When not being viewed, cover the hive with shutters, a blanket or anything else that suits the purpose.

5. Make sure that the hive is not sitting in the sun. The bees cannot thermoregulate a demonstration hive as efficiently as they can a full-sized one. Overheating can kill bees.

6. Workers in a stressed hive may begin to cannibalize larva, pulling it out of cells and dragging it around for Tender Timmy and Sweet Suzy to see. Be prepared to answer the question, "What are those bees *doing*?" Remember: tell the truth!

### Why not?

Teaching kids is more fun for me than for the kids, and that's the way it should be. If I weren't having fun, I guarantee they wouldn't be either. Even when I had to tell a pack of out-of-control summer campers, "You kids are absolutely rotten!" it didn't ruin my day... or theirs. So, there is no downside. Get out there and spread some knowledge!

*This article was originally published August 1, 2017, at [https://baileybeesupply.com/educational\\_resources/](https://baileybeesupply.com/educational_resources/)*

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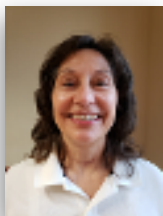
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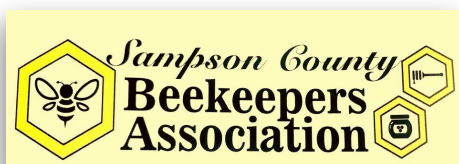


# County Resource Sharing Ignites a Dying Bee Club

by: Robin DeMark NCSBA Certified Beekeeper

## Sampson County Beekeepers

hosted their 'first ever' bee school at the Sampson County Center in Clinton, NC, during Jan - Feb of this year. Members from Beekeepers of the Neuse in Wayne County offered to help create a beginner's beekeeping class by sharing educational materials.



"I've never been this involved in putting a bee school together and had no idea where to start," said Steve Weeks, Sampson County Beekeepers president. If our regional director had not approached me, our local club wouldn't have survived, we weren't going anywhere."



## Beekeepers of the Neuse

According to Weeks, "things really stepped up" after meeting with members from the Wayne County group to discuss using their bee school curriculum previously designed for a virtual school. "All of the class materials were well-organized and self-explanatory in what we needed to do from start to finish," said Weeks. "When our extension agent, Hunter Rose, also offered to help, we felt ready to take on this project."

The impact of resource sharing was educational for both beekeeping clubs.

"These shared resources provided the bridge of confidence for the Sampson County Bee School Committee," said James Dove, NCSBA regional director. "Seeing the course materials created by Beekeepers of the Neuse solidified their decision to move forward and start a beginner's bee school."

Participating instructor, Dr. Kirby Harriss Rigsby, shared her observations while teaching at Sampson County.

"As an instructor, being able to use the recorded lectures from our bee school was very helpful. I could watch the students and see their reactions to gauge their level of comprehension," said Rigsby. "Showing beekeeping equipment and putting a beehive together was essential for the students."

Using videos, printed notebooks, live instruction, and hands-on participation, "all helps explain how and why beekeepers do what we do," added Rigsby. "Meaningful instruction needs to include "show and tell" with a

lecture and personalized slides to really teach the principles of bee care."

Weeks agreed, "Videos are the way to go; it kept our students focused and on topic – they felt very comfortable with all of the class materials and each of the instructors."

After students passed the written exam, Weeks added incentive to continue their education and prepare to take the practical to obtain a NC State Beekeeping Association certification. Weeks gave all graduates their own five frame nuke with bees!



Photo: James Dove

2022 Bee School Graduates

"Teaching new beekeepers how to keep bees alive, providing monthly education at meetings and getting practical training in our bee yard is our main objective now," said Weeks. "Continuing to host a bee school will increase our membership and develop sustainable beekeepers. I encourage other clubs to reach out to their neighboring clubs statewide."

Weeks then chuckled and added a bit of humor from his past.

"I've always had a very large garden with flat looking squash until getting bees. I started with two hives for my garden, and now I have so many bees that I don't have a garden. I've been beekeeping for 12 years. My number one goal now is to keep selling bees and rearing queens to produce a bee stock that is easier for students and beekeepers to manage."

For additional information, contact the Sampson County Center, NC Cooperative Extension office at: (910) 592-7161 or visit the web site: <https://sampson.ces.ncsu.edu>

Robin DeMark is a career Public Affairs Officer of the USAF and VA. She continues to enjoy highlighting unique stories throughout NC with her journalism, photography, and video skills. Beekeeping projects include creating a virtual bee school, public speaking and writing for Bee Buzz magazine. DeMark has been a member of the NCSBA since 2018. Contact Robin by email at [rkd506@gmail.com](mailto:rkd506@gmail.com)

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## Bee Lab Schedule Announced



Meeting with the NCSU Executive Board, Dr. Harry Daniels announced that bids for the design of the new NCSU Field Honey Bee Laboratory were advertised in April, with a firm to be picked for the design in July. Dr. Daniels is Senior Associate Dean of the NCSU College of Agriculture and Life Sciences.

Construction is expected to be completed in three years.

An appropriation of \$4 million funding for the project was approved last year by the NC General Assembly in an effort led by the North Carolina State Beekeepers Association, a project which began six years ago.

## NCSBA Meets With NCSU



Earlier this spring, Rick Coor, Charles Heatherly and Doug Vinson were invited to participate in a forum by Dr. John Dole, the Interim Dean of the NCSU College of Agriculture and Life Sciences. The purpose of the event was for the University to hear of special needs from various components of the NC agriculture community, such as the beekeepers.



Shown above: Coor and Heatherly are pictured with Dr. Dole during an event in Raleigh. President Vinson participated in a similar event in western NC.

## National Society of the Children of the American Revolution



NCSBA Journeyman, Buddy Scott, was the guest speaker at the National Society of the Children of the American Revolution state conference held in Wilmington, NC on March 26. Scott presented "Honeybees & You" to 53 attendees to emphasize the importance of beekeeping throughout history. "The participants were attentive and very well-mannered," said Scott. "This was part of their ongoing education about American history and culture." In addition to the slide show, the group viewed honey bee displays including a queen castle, a ten-frame hive, personal protective equipment, and beekeeping tools. A highlight for the group included several door prizes of local honey.



## NCSBA Library Update



The NCSBA DVD collection is housed in a 3 ft cabinet at Wayne Community College

### *Time marches on...*

The NCSBA Fred Deer Library has undergone transitions in video mediums over the years. We went from 16mm film to videotape and on to DVDs. It appears that we are at another transition point. As you are aware, the Internet has streaming video content about beekeeping, some of which is good, some bad, and most middling. On the good side, much of the Internet content is specific to whatever question you have, and it is immediate. On the bad side, there is misinformation and very poor video and audio production quality. How does Internet beekeeping content affect you?

The library circulation data show that 18 DVDs were checked out from July 2020- June 2021 and from July 2021 until today- zero. What does this mean for the library?

The DVD medium is being phased out for technical reasons and new beekeeping content on DVD is very, very difficult to find. Many of the DVDs in the library are decades old. Their content may not match current Best Beekeeping Practices nor cover current pests or diseases.

The NCSBA collection is a small part of the Wayne Community College Library. The staff that manage the collection may not be able to continue that service in the coming years. So, what planning can we do now to provide the NCSBA members with beekeeping information? Or is it a service that is no longer needed? What would you like to see?

In the remote possibility that you have a favorite DVD that is still available on DVD, and you think it would make a good addition the NCSBA Library collection, please let me know by using either contact listed below.

Also, due to some recent concerns, patrons will be limited to checking out one DVD at a time.

**Bob Kemper, NCSBA Fred Deer Librarian**

[kemper27530@gmail.com](mailto:kemper27530@gmail.com) 919-731-2146





## CONFERENCE & TRADESHOW 2022

# American Beekeeping Federation

## 2022 Conference Wrap-Up

by Etienne Nadieu

**The 2022** American Beekeeping Federation (ABF) Conference and Tradeshow was held in Las Vegas Nevada in January. The selected location was the South Pointe Hotel located at the southern portion of Las Vegas. The facility was ideal, providing an ample amount of space to facilitate this annual beekeeping conference.

This year's agenda was once again packed with wonderful speakers delivering updated information on the honey bee and beekeeping industry. The four-day event included talks from key-note speakers such as Dr. Jamie Ellis from the University of Florida, Randy Oliver from Grass Valley, CA, Dr. Judy Wu-Smart from University of Nebraska-Lincoln, Dr. Scott McArt from Cornell University, and our very own Dr. David Tarpy from North Carolina State University.

In addition to the keynote speakers, presentations were offered on topics that included legislative updates affecting the beekeeping industry, EPA updates, the anti-dumping case update, and pollination protection plans. Each organization had their respective representatives presenting up-to-date information accordingly.

The conference also included breakout sessions that met the interest of all beekeepers, ranging in small-scale, sideliners, package bee and queen breeders, commercial and honey producers / packers. These breakout sessions included multiple presentations on a wide array of topics which encouraged small group discussions and networking.

The conference also included booths with vendors, a silent auction, a honey show competition, state delegate assembly, commercial beekeeping breakfast, kids with bees, voting for the 2022 American Honey Queen, an ABF banquet, and the annual ABF business meeting.

Once again, the American Beekeeping Federation did an outstanding job organizing and offering a great conference and tradeshow. Beekeepers at all levels were able to attend and benefit from top-class speakers offering the most current information in the honey bee industry. For those interested in joining the ABF, please visit [www.abfnet.org](http://www.abfnet.org). For those interested in attending an annual conference, the 2023 American Beekeeping Federation Conference and Tradeshow has been scheduled for January 4-8 in Jacksonville, Florida.



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# NC STATE UNIVERSITY



## Beekeeping in North Carolina

Agriculture is North Carolina's leading industry contributing nearly \$100 billion to the state's economy every year. Farmers require the pollination services of bees for up to a third of the crops grown statewide. Fortunately, North Carolina has a strong history of apiculture and is one of the top states in beehive numbers in addition to having one of the largest state associations of beekeepers. With over 80 counties organized into local chapters, the North Carolina State Beekeepers Association (NCSBA) has more than 4,000 active members who work towards education, awareness, and the promotion of honeybees across the state.



## Apiculture at NC State

The NC State Apiculture Program plays an important role in beekeeping across the state. Dr. David Tarpy and his lab conduct research on colony health and productivity, and through NC State Extension, are able to relay this information to beekeepers and the agricultural community. Extension services help support industry and hobbyist beekeepers through a number of resources, including educational clinics, pathogen screening, genotyping, as well as measuring overall quality of colony health and productivity.

The research conducted by Dr. Tarpy and his lab not only benefits beekeepers in North Carolina, but has a national audience. Through partnerships with apiculture science programs and universities across the United States, research can be conducted in, and data can be collected from, a number of real-

world settings that help provide information on best practices and disease prevention. Additionally, by working with farmers across the state, Dr. Tarpy and the Apiculture Program are able to better coordinate and protect honeybees, furthering strengthening local economies.



## Future Improvements

With \$4 million in funding set aside in the 2021 budget passed by the North Carolina State Legislature, the Apiculture Program can begin design and construction on a new facility for research, development, education, and extension services. The new and improved bee lab will help strengthen the Apiculture Program at NC State as well as allow it room to grow and educate a new generation of beekeepers. This new facility will provide space for the Apiculture Program to hire additional staff and increase their impact on research and extension, however, the program is in need of support from donors and industry partners to accomplish these long-term goals.





Thanks to funding from the North Carolina Legislature and the longstanding support of beekeepers across the state, the future of the NC State Apiculture Program looks bright. Expanding the program to include additional technicians, researchers, and administrators will lead to an increase in operational and facility costs. There are many ways you can help support the growth and sustainability of apiculture at NC State.

### How You Can Support the NC State Apiculture Program

Your donation will provide Dr. Tarpy and the Apiculture Program with greater resources to hire additional field technicians, researchers, and graduate students. These funds will allow more faculty and staff to engage in increased extension services across the state, research and education, as well as create a solid foundation from which the Apiculture Program at NC State can continue to grow.

### Annual Gifts and Pledges

These gifts will go to support areas of greatest need within the program. This flexible funding allows the Apiculture Program to address areas of critical importance as they emerge. Additionally, these funds help the program reduce their reliance on restricted grant funding that often overlooks operational and administrative needs. You can make a one-time gift to the program or set up recurring payments to last as long as you'd like.

### Endowments

Endowments provide donors with the opportunity to create living legacies. These funds would be immediately invested, and

when fully funded, provide annual income for the Apiculture Program. Endowments provide certain, steady support in perpetuity, and would allow the Apiculture Program the ability to better prepare and plan for the future.

### Gifts In Kind

The Apiculture Program is always seeking creative solutions to material problems. If you have surplus equipment or other non-monetary assets (e.g. gently used honey extractors, microscopes, even cars) please consider donating them to the program. Gift receipts will be issued in accordance with IRS guidelines.

### Estate Gifts

If you'd like to include the Apiculture Program in your estate planning, please let us know! There are many ways to include Apiculture within your estate plans and we can provide you with the information and tools you will need to ensure your wishes are fulfilled.

Make gifts online at:  
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OR

Make checks payable to:  
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And send to the following address:  
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NC State University  
Campus Box 7645  
Raleigh, NC 27695-7645

*Funds supporting the Apiculture Science Fund are collected and managed by The North Carolina Agricultural Foundation, Inc., a 501(c)3 non-profit, Tax ID 56-6049304. You will receive an official receipt for your donation.*

Interested in learning more about how you can support the NC State Apiculture Program?  
Please contact Sterling Frierson at [sjfriers@ncsu.edu](mailto:sjfriers@ncsu.edu) or (919) 691-0190



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# Hearing impaired beekeeper supported at the NCSBA State Conference

by: Robin DeMark NCSBA Certified Beekeeper

**Prior to attending** the North Carolina State Beekeepers Association (NCSBA) Conference, Regional Director, James Dove spoke to Journeyman Buddy Scott of Beekeepers of the Neuse, about helping a new beekeeping student who was hearing impaired. The student attended the recent Sampson County Bee School and needed sign language interpretation to attend the state conference held in New Bern, NC on March 5.

Providing continued education and outreach support to local and neighboring beekeeping clubs is part of the NCSBA Master Beekeepers program (MBP). The MBP guides beekeepers in improving their beekeeping skills and knowledge. It also delivers valuable information to beekeepers and the public through outreach services.

Photo: Buddy Scott



*Laurie Cooke, Beekeepers of the Neuse member and state certified beekeeper, provides sign language services to new certified beekeepers at the NCSBA State conference in New Bern. Deaf interpreters are specialists who provide interpreting, translation, and transliteration services in American Sign Language used by individuals who are deaf or hard-of-hearing.*

Scott requested help from fellow beekeeper and American Sign Language interpreter, Laurie Cooke. "Cooke eagerly accepted the challenge to help a mother and daughter team who needed her skills to continue their education at the state conference," said Scott. "This was the right thing to do. For me this was a God moment to help and we had the ability to do it."

Photo: Maria Lord



*Abby Beltran (left) and Maria Lord (right) are new beekeepers from the 2022 Sampson County Bee School. The mother and daughter team own and operate a Permaculture Farm in the county. The need to pollinate the gardens and crops for the farm was the next step in moving forward to help with pollination efforts. "With Laurie Cooke's help, I was able to understand 85% of what the speaker was talking about at the state conference," said Lord. "Lip reading a speaker is very hard to interpret so, I depend on sign language." Permaculture farms help farmers achieve high productivity using environmentally-friendly farming methods. "Getting bees was a natural fit for our farm and pollination," said Beltran.*

For more information about the MBP and state conferences, visit the web site:

<https://www.ncbeekeepers.org/programs/mbp>





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## Chatham County Beekeepers Dedicate Learning Hive to Judy Pick

**Judy Pick** was a long time Chatham County Beekeepers Association member, NCSBA member, NC Zoo Coordinator for the Honey Bee Garden, and passionate beekeeping educator. During her time with CCBA, Judy was the "keeper of the hive": the 2-frame

CCBA observation hive, which she referred to as a "learning Hive". Since Judy's passing, the CCBA refurbished the hive and added a plaque in her honor. The hive is ready to continue educating curious kids and adults, just like Judy would have wanted. Thank you, Judy!



*Dr Jim Pick pictured with CCBA's observation hive that was dedicated to his late wife Judy Pick*



*Memorial plaque dedicated to Judy Pick, who was the "Keeper of the Hive" for the CCBA 2-frame "Learning Hive".*



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# Feeding Pollen Patties Without Fear of Raising Small Hive Beetles

by: Eric Talley NC Master Craftsman



**Keeping honey bees alive** in today's environment becomes more challenging each year due to pests, diseases, and available nutrition, among other problems associated with beekeeping. Honey bees need protein acquired from various sources of pollen to feed larvae. Pollen is the only available protein source for honey bees. Winter bees need pollen to build fat reserves, called vitellogenin, to survive during the winter and raise brood in late-Winter and Spring. The health and survival of the entire colony is dependent on the vitellogenin reserves of the Winter nurse bees. Without adequate amounts of pollen to feed larvae the future bees that hatch may be smaller and not as healthy caused by lack of nutrition during the development stage. Some areas of the country where bees are kept and managed lack sufficient available pollen-producing plants, are overstocked with too many colonies, or the colonies are placed in mono-floral situations during a pollination contract. With the lack of sufficient natural pollen for honey bees to collect, beekeepers are resorting to feeding pollen substitute in the Spring to assist in colony build up before the natural pollen is available.

Photo: Eric Talley



*Dry pollen feeding station*

Pollen substitute is available both in a dry powder form or in the form of commercially produced pollen patties. Dry pollen substitute can be fed dry by use of a feeding station outside of the hive, or mixed into pollen patties and fed within the hive body. Small colonies that need the pollen substitute to feed developing larvae are not always strong enough to forage for sufficient amounts to fulfill the requirements of the colony. Feeding dry pollen can become a problem when Spring weather changes from day to day. Rain or cold temperatures confine the bees to the hive body making dry pollen substitute located in a feeding station outside the hive useless. Feeding pollen substitute in a patty form within the brood area allows the nurse bees access it even when the weather has the foragers confined to the hive body.

Small hive beetle (SHB) adults are not destructive and can live in the hive in large numbers for an extended time without causing problems. Large populous colonies are able to keep SHB's in check better than small weaker colonies that have too much space to protect. SHB's have developed the ability to stimulate the mouthparts of worker bees with their antennae, in this way tricking the bee to feed them. SHB's are known to over-winter within the cluster, and SHB's love pollen patties. Honey bees cannot remove adult SHB's from the hive cavity because of the hard shield-like shell, and you may see bees chasing adult SHB's. When SHB's find a space that they can get into that is too small for the bees to get to them (or comb containing pollen, nectar or honey that are not protected), the SHB will lay eggs. Within 24 hours, these eggs hatch into very small larvae that begin to feed immediately. The larvae feed on the honey and pollen stores, including the pollen patties that are laying on top of the brood frames.



Photo: Google Images

*Pollen patty on top bars*

**The problem:** Pollen patties are designed to be placed or "laid" onto the top of the brood frames above the developing brood. When pollen patties are placed directly onto the top bars there is no bee space left between the pollen patty and the top bar allowing the SHB's to push their way into this area between the top bar and the pollen patty and lay eggs. The eggs hatch into larvae that then feed on the pollen patty before moving on to feed on, and destroy, valuable resources within the hive. SHB's are becoming a greater problem every year, especially in warmer climates, and yet feeding pollen substitute may be a life-saving step to keeping a colony alive in early Spring and help the colony to build up.

**The Solution:** The pollen patty feeder that I have designed, built and use when feeding pollen patties suspends or 'floats' the pollen patty above the top of



the brood frames and allows the bees to access all sides of the pollen patty and keeps SHB's from having a place to lay eggs.

Photo: Google Images



***Small Hive Beetle larvae in pollen patty that was placed onto the top-bars***

This feeder can be built from new wood or a cut-off piece of an old hive body that has been taken out of service. There is very little expense either way. When cutting an old hive body take caution not to cut where it's nailed and wear safety glasses.

Photo: Eric Talley



***Hive body taken out of service due to rot, ripped on the table saw to use for pollen patty feeders***

The feeder needs to be 1 ½ to 2 inches in depth, and sized to fit 10-frame, 8-frame, or 5-frame hive bodies. Wooden cross bars for suspending and attaching the ¼ inch hardware cloth need to be raised ¼ inch up from the bottom to make sure bee space isn't compromised between them and the top-bars of the brood chamber. Suspending ¼-inch hardware cloth allows the bees to transition through it and keep SHB's from staying in one place long enough to lay eggs. Using 1/8-inch hardware cloth does not allow bees to transition through and is not recommended. Place finished feeder directly above the brood chamber where the nurse bees have access to the pollen patty. Ensure the pollen patty is not touching the wooden cross members.



Photo: Eric Talley

***Note spacers under cross members, raising them 1/4 inch***

Care should be taken to remove the pollen patty feeder before the major nectar flow begins as the excess space within the feeder will be filled with comb and brood, pollen or nectar and honey. Most beekeepers don't feed strong colonies pollen in the Spring and concentrate on weaker/smaller colonies that need a boost to assist build up. Nucleus colonies expand very rapidly when fed pollen patties since they are small and have fewer foragers; remembering to be sure the pollen patty isn't placed on the cross bars. Small colonies have fewer foragers and fewer bees available to chase and keep small hive beetles in check.



Photo: Eric Talley

***Pollen patty on the feeder***

Not every beekeeper has the tools or ability to build items like this. Maintaining membership and attending monthly meetings in a local beekeepers association can provide a mentor and possibly a contact to a beekeeper who has the tools and ability to assist you in constructing one or more pollen patty feeders for your use.

*Eric is a North Carolina State Beekeepers Association Master Craftsman Beekeeper who lives and raises honey bees on the coast. Eric started beekeeping in 1973 as a Future Farmers of America project. Four years later he joined the U.S. Marine Corps and didn't keep bees for the next 30 years. Eric got the bug back and started keeping honey bees again in March 2008. He raises nucs and VSH queens during the summer for his use and sale to other beekeepers in the area.*





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# NCSBA Golden Achievement Program News!

by: GAP Committee

**Every year** the NCSBA Golden Achievement Program (GAP) recognizes NCSBA affiliate Chapters who have made significant accomplishments in support of North Carolina beekeeping over the past year. Points are awarded for various chapter activities and achievements. Chapters submit a summary book from the past year to the GAP Committee for review. The Chapter of the Year is awarded prizes including a banner and framed certificate, gift certificates, prizes from our sponsors, and a \$700 cost share grant from the NCSBA for an approved project. Chapters who enter and meet easy-to-reach thresholds of achievements are given a one-time award of \$300.



The GAP began in 2004 to recognize Chapters' exemplary commitment to the honey bee, to their fellow chapter members, to their community, and to the North Carolina State Beekeepers Association. Five County Beekeepers Association (5CBA) and Wilson County Beekeepers exemplify the NCSBA's mission to advance beekeeping through improved communication, education, and the support of beekeeping science. Please join the GAP Committee & NCSBA in congratulating and celebrating these two chapters as the 2021 Golden Achievement Program Chapters of the Year.



**2020-2021 GAP Winners: 5 County Beekeepers Association and Wilson County Beekeepers Association**

We also want to thank the following vendors (in alphabetical order) who supported the GAP by generously donating gift certificates and prizes for the Chapter of the Year and participating chapters, despite COVID-19 causing financial uncertainty for many businesses. Please consider supporting them when purchasing bees, beekeeping equipment and/or supplies:

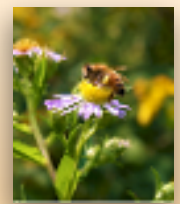
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It was the GAP Committee's privilege to review the GAP Chapter of the Year submissions. Congratulations to all the Chapters who submitted books for 2021. Our chapters are doing a great job promoting beekeeping to their members and within their communities. Chapter guidelines and forms for entering the program can be found at [ncbeekeepers.org](http://ncbeekeepers.org). A list of past winners is also listed on the website.

## Bee Buzz



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## Featured Speakers



**Kaira Wagoner** is graduate of Guilford College, earned her masters and doctorate degrees from the University of North Carolina Greensboro (UNCG), served five years as a post-doctoral fellow in the UNCG social insect lab. Dr. Wagoner currently serves as a Research Scientist, splitting her time between UNCG and Optera, a Greensboro-based start-up focused on improving honey bee health that was co-founded by Dr. Wagoner in 2020. Dr. Wagoner's research focuses on honey bee pests and diseases, particularly as they relate to the immune mechanism hygienic behavior, the ability of adult honey bees to detect and remove unhealthy brood from the hive.

**Talk:** *"Using the Science of Honey bee Hygiene to Fight Varroa and Improve Colony Health"*



**Megan Damico** is a 5th-year Ph.D. candidate in Environmental Health Sciences at the University of North Carolina at Greensboro (UNCG) where she studies the effectiveness of available honey bee prebiotics and probiotics. In addition to her Ph.D. research, Megan is working to create better regulatory policy avenues for honey bee microbial therapeutic products as a Policy Entrepreneurship Fellow with the Federation of American Scientists, a non-profit think-tank based in Washington D.C. Megan holds a B.S. in Biomedical Sciences from Grand Valley State University (GVSU) in Allendale, Michigan, where she also began training to become a beekeeper and was the president of the GVSU Beekeeping Club for two years.

**Talk:** *"The Wild West of Honey Bee Microbial Therapeutic Products"*



**Bob Binnie**, along with his wife Suzette, owns and operates Blue Ridge Honey Co. in Lakemont, Georgia and operates approximately 2000 colonies of bees along with a sizable honey packing operation. Bob began his commercial beekeeping career in Oregon in 1981 and because of migratory beekeeping practices has had bees in nine states. Voted 2003 Beekeeper of The Year in Georgia, Bob has also been president of several beekeeping associations including the Georgia Beekeepers Association, the Northeast Georgia Mountain Beekeepers Association, and the Macon County Beekeepers in western North Carolina.

**Talks:** *"Producing Queen Cells with Queen-rite Colonies"*

*"The Chemistry and Mechanics Behind Feeding Bees"*



**Cameron Jack** grew up around honey bees and beekeeping, often helping his grandfather with hive inspections and honey extraction. He obtained his B.S. degree in biology from Southern Utah University in 2012 and completed his Master's degree at Oregon State University under the mentorship of Dr. Ramesh Sagili in 2015. There he conducted research on the honey bee gut pathogen *Nosema ceranae*. He then traveled across the country to pursue a Ph.D. at the University of Florida under the mentorship of Dr. Jamie Ellis where he began investigating methods to control the devastating pest *Varroa destructor*. In 2018, Cameron was hired on as a teaching faculty at the University of Florida's Entomology and Nematology Department. In 2021, he transitioned into an Assistant Professor position where he continues to teach and conduct research focused on honey bee toxicology.

**Talks:** *"The In's and Out's of Using Oxalic Acid as a Varroa Control"*

*"The Seasonal Efficacy of Common Varroa Treatments"*





**Jon Zawislak** is an Assistant Professor of Apiculture and Urban Entomology for the University of Arkansas System Division of Agriculture. He has worked and played with honey bees since 1998, and is equally at home in the apiary, the laboratory or the classroom. Each year he teaches workshops and classes for new and experienced beekeepers throughout Arkansas and beyond. He emphasizes understanding the biology and behavior of honey bees and related pests as key to keeping bees healthy, and minimizing the use of pesticides in the hives. He also spreads the word about the importance of pollinators to the non-beekeeping public. Jon has a background in botany and entomology, and is an EAS certified Master Beekeeper.

**Talks:** *"Common Scents: Honey Bee Pheromones"*

*"Mysteries and Management of Laying Workers"*



**David Burns** began beekeeping in 1994 after hiving a swarm from a fallen tree. After moving those hives from Ohio to Illinois, the hives were lost due to mites, and the yard had to be started all over again. In the beginning the Burns family just sold honey, but as time went on and the yard became bigger, the Burns family began building their own hives and selling them to other beekeepers. Knowing that the success of beekeepers was all dependent upon education, David began blogging and uploading videos to YouTube. His YouTube channel now has over 85,000 subscribers. In order to make sure beekeepers had the best and latest of scientific information on bees and beekeeping, David took several years to become a Certified Master Beekeeper through the Eastern Apicultural Society (2010). David teaches beekeeping workshops all year at their Training Center in Fairmount, IL.

**Talks:** *"Feeding Throughout The Seasons"*

*"Overwintering Colonies"*

For the latest Conference Information and Registration visit:

[www.ncbeekeepers.org](http://www.ncbeekeepers.org)



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