



The Monthly Newsletter of the Mecklenburg County Beekeepers Association July 2017

President's Buzz

by Ed Moyers

Science . . . What is it? For many folks, when they see the word science combined with something, they substitute the word fact. For them, if something is proven scientifically it is automatically fact. Unfortunately, this is not the case.

Science is the systematic study of the nature and behavior of the material and physical universe. It is based on observation, experiment, and measurement, and results in the formulation of laws to describe the collected information in general terms. In theory, at least, the laws formulated from these observations should be reliable. And for relatively simple systems, such as earth-bound gravity, this is indeed the case.

For more complex systems, however, this is not the case. Take meteorology for example. A great deal of effort has been expended in the study of weather and the physical and chemical systems that produce it. But to be honest, I'm not sure that weather predictions are more accurate than they were when I was a kid 50 years ago. This is not a condemnation of the scientists who study weather systems. Rather, it is an acknowledgement of how difficult it is to understand all of the variables that influence a complex system, and how they relate back to the measurements scientists make to develop their models of these systems.

I think I could successfully argue that honey bees and their colonies present systems that are as complex as the weather. As a result, it should be no surprise that as our methods to experiment and measure them—and their environment—improve, our understanding of them, and how the environment impacts them, evolves with time.

A great example is a study that was reported last year in online journal Nature Scientific Reports. The study, In-hive Pesticide Exposome: Assessing risks to migratory honey bees from in-hive pesticide contamination in the Eastern United States, was conducted by scientists from several universities—including NC State's own David Tarpy—and tracked 91 colonies owned by three different commercial beekeepers over an entire agricultural season.

July's Meeting

**July 20
7 PM**

Mouzon United Methodist
Church
3100 Selwyn Avenue
Charlotte, NC

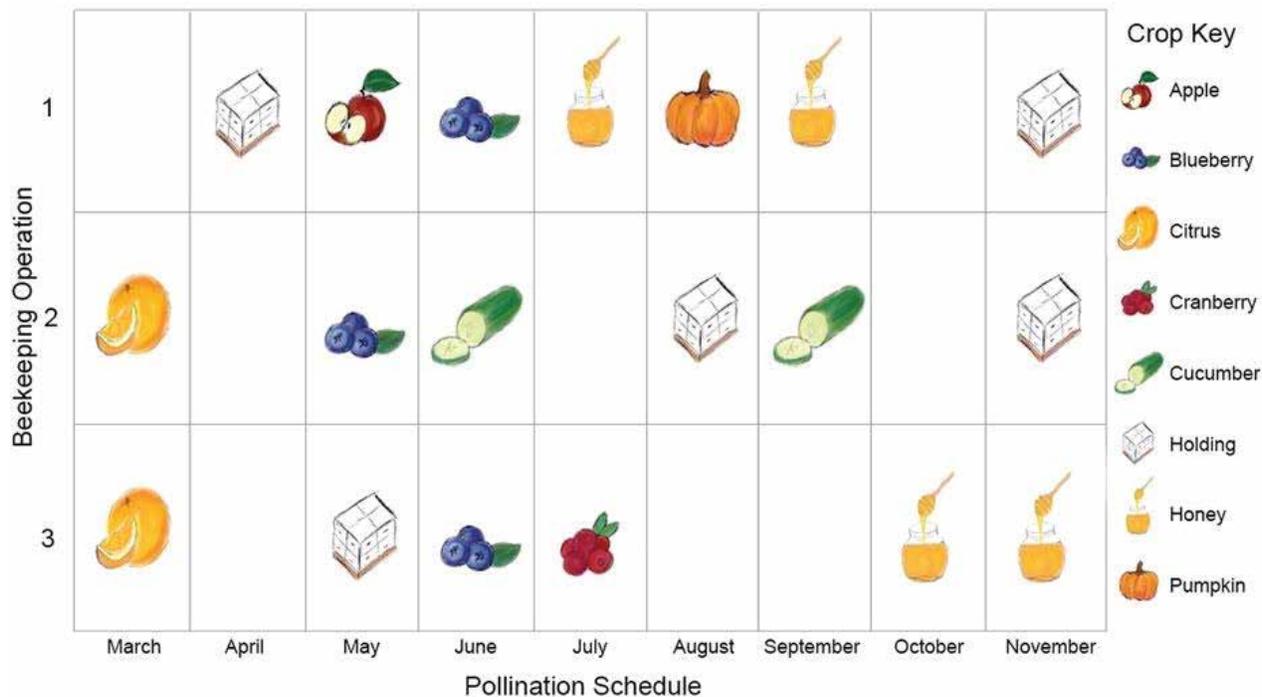
Guest Speaker will be
Jessica Louque and she will be
covering Government Bee
Research

Refreshments provided by
Alice Harrill and Bill Kenney



Some interesting features and findings of the study:

- Three different additive methods were used to summarize the pesticide burden:
 1. An estimate of the pesticide exposure risk called the hazard quotient (HQ), which has been developed by other researchers that integrates the total hazard posed to a colony by the cumulative toxicity of all of the pesticides found.
 2. The total number of pesticide residues in the hive
 3. The number of relevant pesticide residues (those above a minimum level of toxicity)
- Pesticide residues present in the hive were determined by sampling and analyzing the following:
 1. Wax
 2. Bee bread
 3. Nurse bees
- When the colonies were used in pollination services, they were exposed to higher levels of pesticides, but when used for honey production or kept in holding yards, exposure to pesticides was low.
- The higher the total number of pesticides in the wax, the higher the risk of colony mortality.
- Surprisingly high levels of fungicides were found in the colonies. High levels in the wax of fungicides that disrupt sterols were linked to queen death and colony mortality.
- A surprise finding was only trace levels, at most, of neonicotinoids in the colonies. The researchers are hesitant to conclude that neonics are not a problem, though, saying that if they had sampled/analyzed some thing different, such as the honey in the hive, they might have found higher concentrations.



This chart shows the pollination schedule of each of the beehive operations tracked in this study.

If you want to get a fuller understanding of the work the researchers did, click here:

<https://www.nature.com/articles/srep33207>

The entire article is freely available for your reading pleasure.



(President's Buzz cont'd)

This study helped me understand a couple of practices that seem to work well. First, frequent rotation of your frames to minimize contaminant buildup in the wax. Those of you who were able to attend our March meeting may recall that one of our panelists, Johnny Preston, noted that he changes out most, or all, of his frames each year, noting that the bees seemed to be healthier and more productive.

Second, part of the great success that Mel Disselkoen experiences with his OTS method of managing his hives may be due to the fact that he effectively replaces his queens not once, but twice a year. This means that he is always using young queens who have not experienced a long period of exposures to any pesticides that may have built up in his hives (I think his method also results in rotating out the comb pretty regularly, but he didn't discuss that aspect during his seminar).

At the same time, it calls into question the current belief of the majority of beekeepers that neonics are a huge problem for honey bees. Maybe we're focused on the wrong pesticide... Obviously, more research needs to be done in this area.

Finally, it should be noted that this study looked at hives used on commercial pollination. I have to wonder what the results would have for hives maintained in the same beeyard, year round, in an urban environment like Charlotte.

Appreciation for what we do...

For all of you who willingly go out in the community to share your love and knowledge of bees, I want to say, "Thank you!" Your efforts are greatly appreciated by the folks you talk to. As proof, here is a note I recently received after David Segrest did a presentation for a camp run at Charlotte Christian:

Dear Ed,

I just wanted to let you know how much we appreciated David Segrest's presentation. The fact that he brought "his bees" made it all come to life for our campers!

His enthusiasm for what he does was apparent and we would like you to know that we are so grateful your efforts in bringing it all together.

*Thanks again,
Irene Hanifin*

You can also find an additional example of someone who has benefited from you sharing in a brief article later in this month's newsletter by a Myers Park student who was helped by a couple of our Meckbees.

Thanks!
Ed



Treatment Free...Clarified

by Andrew Thiessen

Quick Note: check this out.

How to submit bees for disease analysis:

<http://www.psychochickenecofarm.com/2017/02/14/how-to-submit-bees-for-disease-analysis-to-usda/>

It seems there is some confusion about what exactly it means to be a “Treatment Free” beekeeper. First, Treatment Free beekeeping might be better understood if renamed, Chemical-Free Beekeeping. It’s perfectly fine to skip chemical treatments of any kind. But you still have to manage your bees. Managing hives is essential to being a beekeeper...of any sort. Set it and forget it is not beekeeping. It’s neglect. And that is what gets many folks upset about the misperception of Treatment Free.



Bond Method and a better way. The Bond Method—so named for the James Bond movie, *Live and Let Die*—is a method where you simply let the poorly performing hives die and make up colony losses by pulling splits from the survivors. Since this method was developed, we’ve had some time to reflect. We now realize while this is one way, it may not be the best way. Enter the Soft Bond method.

In the Soft Bond method, you monitor mite count levels and identify hives with high mite counts. Instead of letting the whole hive die, you simply kill the queen in the high mite hive. Then replace her with a daughter queen raised from your hives with the lowest mite counts. No further chemical treatment is administered with this method because in six weeks time, all bees with those high mite count genetics will have died off. By then the hive will be repopulated with the genetics of the new queen from the low mite count hive, which will eliminate the remaining mites in short order (through either grooming or chewing up mites). You keep your original hive numbers, but you’ve still eliminated the poor genetics. That is true Treatment Free (better named Chemical Free) bee management. In a sense, you’ve created a sort of Varroa “Black Hole” as Dr. John Kefuss calls it.



“Who is Dr. John Kefuss?” you ask. He is the foremost authority and one of the first people to implement Treatment Free beekeeping on a commercial scale nearly 20 years ago back in 1999. Dr. Kefuss is the creator of both the Bond and the Soft Bond methods. Prior to his retirement, he was a queen breeder producing 2,000 queens for sale per month! Now that he is in his late 70s and retired he only produces a few thousand queens per year. (Only!)

Dr. Kefuss has a life mission of educating the world about how we can all become chemical free beekeepers if we would like to. You can check out his team’s complete research and thought process here: “Selection for resistance to Varroa destructor under commercial beekeeping conditions” in *Journal of Apicultural Research*, 2015: <http://www.tandfonline.com/doi/pdf/10.1080/00218839.2016.1160709>



You can also hear his recent interview on Solomon Parker's Treatment Free Podcast here:

<https://tfb.podbean.com/e/treatment-free-beekeeping-podcast-episode-48-mite-black-holes-with-dr-john-kefuss/>

Want to "Raise the Bar" in your apiary? Try the Soft Bond method on a hive or two. Take mite counts on all your hives right now (300 bee sample sugar roll is a most effective method). Early July is the best time to implement this method for our region because it gives hives sufficient time to repopulate and eliminate mites before fall. Requeen your highest mite count hive(s) with daughter queens from your lowest mite count hive(s). Do no further treatment to the hive(s) and monitor your winter survival rate. Repeated year over year, you can develop a 100% chemical free apiary in 3-4 years with average winter loss of 10-15% no matter what size your apiary may be.

If you only have a few hives, think about developing a "Queen Sharing" program with a few beekeeper friends. All involved take mite counts on all their hives—do this now! Produce daughter queens from the lowest mite hive(s) in your group and share them to requeen the highest mite count hives in your group. If you'd like more information on this type of Queen Sharing program, ask Peter Brezny how the Buncombe County bee club is doing it in Asheville, NC. Contact him through his website here: <http://www.psychochickenecofarm.com>

Have fun and always be improving!

Bees: The Ultimate Recyclers

by Gerry Mack

Honey bees are said to recycle propolis from used equipment. I hadn't seen this until I brought home a propolis-clogged screened inner cover and leaned it on the back porch to scrape. We had 6 freshly-caught swarms next to this porch and the bees were setting up housekeeping in their new boxes.

The inner cover sat there as just another job delayed by swarm season but eventually I noticed that the screen was now magically clean. Bees had chewed off the propolis and dropped crumbly propolis nuggets onto the porch floor.

A steady flow of bees were packing up these propolis nuggets to carry back to the hives. Unlike bringing home pollen, propolis-foraging bees need other house bees to remove propolis from their corbiculae.

Now if I could only get them to paint hive boxes....

Video available here:

<http://www.meckbees.org/newsletter-archive.html>

(scroll to the bottom of the site)



Bees cleaning propolis from an inner cover



Slime-Out: Winning a Losing Battle

by Rachel Woodhouse

When I was accidentally sent 4 packages of bees last year instead of two, I had to make quick arrangements to accommodate two extra hives. Three on my own property was doable, but I had to locate my fourth hive at my parents' property about 3 or 4 miles down the road. As beautiful as the property is, it is heavily wooded, and it was very difficult to find a place in full sun, so we found the fullest sun we could.

Fast forward a year later: the hive overwintered perfectly. The bees were abundant, healthy, built out, full of food stores, and all-around looking like it was going to be a brilliant year for honey. I tend to be somewhat hands-off with my hives when they're looking good, so I left them alone to do their thing for three weeks without worrying about opening up the hive.

During those three weeks, the trees started to fill in with leaves again, and their full-sun spot quickly became partial-shade. Much to my dismay, I walked down to the hive one morning with grand plans of checking in on their utter brilliance and splendor, only to smell a funky odor as I approached. To my horror, there was honey pouring out the entrance, and little white larvae crawling about: Small (expletive deleted) Hive Beetles.

Panicked, I opened the hive up and it was an absolute disaster. Every possible inch of the 2-deep boxes was filled with disgusting, wriggling hive beetle larvae and slimy fermented honey. The hive that was thriving and abundant with bees only three weeks prior was down to about 150 bees, one faithful queen, and nowhere to lay eggs or store food. I am not one to cry easily, but I felt a flood coming on.

In a desperate attempt to save the queen and what was left, I grabbed a shallow super (I had no other boxes available), filled it with frames of drawn-out comb and one full of food, and I removed the entire old hive completely, only using the bottom board (after cleaning) and the cover. I prayed that with a completely clean hive, they would be able to rebuild their colony. I had to dispose of every last bit of the slimed-out hive, and I froze all of the frames for a week before trashing it, just to make sure those little jerks were all dead.



Have you ever seen a more disgusting group of cretins in your life?

I checked the hive 3 days later and there were already hive beetle larvae in the honey stores. I removed those frames, installed a "beetle baffle," put multiple "beetle blaster" traps inside, lined the bottom board with felted fabric to trap adult beetles, and sprinkled diatomaceous earth on the ground under the hive. I planted mint all around the hive stand... pretty much anything I could think of that has any sort of lore behind it for stopping beetles, I tried it all.

The population was quickly declining, so I robbed my healthiest hive of a frame packed with capped brood to donate to this hive. I checked on it again 3 days later... covered in SHB larvae. There were poor little baby bees everywhere that had died as they were emerging from their cells. I've never felt such an impulse to punch a bunch



(Slime-Out cont'd)

of insect larvae in their stupid faces. I was giving up. That was it. No more fourth hive, the nasty beetles won.

The only thing was, there was this beautiful amber-colored queen in there. She was so faithful to her hive, and her 50 or so remaining doting children. How could I possibly, knowingly, let the queen down without giving it some sort of final effort?



I scoured my books and the internet for a solution. I couldn't find anything beyond what I had already tried, and most websites where SHB was experienced, the beekeeper took it as a total loss. I was doomed... So that's when an epiphany struck and I made use of the MeckBees Facebook page. Duh, right? That's what it's there for! I posted my query, and within an hour I got a response from a familiar face from Bee School, *The Libby Mack*.

Libby's directions were pretty simple:

1. Take frames of brood from healthy hives. Make sure they are covered in brood and bees. Put them in a traveling box.
2. Scoop a bunch of extra bees in there for good measure (make sure not to take the queen).
3. Secure bees in box, take to the location of the other hive, spray everyone within the box and the weak hive with 1:1 sugar syrup mixed with a few drops of Honey Bee Healthy to mask their scent. Transfer brood frames into the weak hive and dump in the extra bees.

What I was most worried about was the queen. Would she be safe in all of this? Libby assured me that with their scents masked, they would likely very quickly accept a laying queen and she would be fine. I did not have Honey Bee Healthy or a traveling box, so I substituted with a few drops of lemongrass oil and I created a traveling box out of a deep box, an inner cover with the hole taped up, and a screened cover for the top, and a whoooooole lot of extra tape.

Since I had already robbed my healthiest hive of brood, I decided to take 2 frames of brood from them as well as one from my next healthiest hive. I sprayed everyone with the lemongrass syrup and I shook in a bunch of bees from both hives. They were very concerned with licking each other off and no one was fighting, so I headed over to the other property, praying the whole time that I had covered every hole in that box.

The first thing that happened when we took the cover off of the weak hive? The queen *flew away*. We watched in terror as she landed on a nearby tree... and then flew off to who knows where. That was it. The dam broke and a waterfall gushed from my heartbroken face. That was a LOT of effort for absolutely nothing.



As I took the bottom board up the yard to clean it off with the hose, all the while muttering obscenities, I was trying to figure out what to do with this giant box of bees and brood now. To my amazement, when I got back down to the hive stand and put the bottom board back, the queen *flew back into the box*. I hastily sprayed everyone down, put the brood into the box, dumped the bees in there, closed up shop, and prayed that they would accept the new queen and all would be well.

I checked on them a week later, honestly expecting to find no queen and frames full of beetles. But the queen was





thriving, she was laying eggs like crazy, and there was not a beetle larva to be found. It has now been almost two months and, even though the beetles continue to be a nuisance due to the partially shady location, the hive is back to its old strong self. The queen is gorgeous as ever, the workers are busy, the population is up, and the colony has officially been saved.

I am now a little bit paranoid about letting this hive go longer than a week and a half without checking on it. I don't have the naivete to believe that the battle is officially over and I'm safe from SHB for the rest of my life. However, what I *do* have is great faith in the support and experience from the Mecklenburg County Beekeepers Association members and their dedication to helping newbies like myself overcome these tragedies.

I literally banished Facebook from my life a month prior because of its life-sucking tendencies. In this case, it turned out to be a life saver. And a very special thank you to Libby Mack for the wisdom. I am so grateful that my queen was able to continue her reign over a now healthy hive.



Feeding Notes

by Andrew Thiessen

A few notes on harvesting and feeding...

This is the time of year when most of us in Charlotte harvest honey. (writer's intrusion here: I probably should have written this back in May, so we could super our hives in a manner to minimize the need for feeding. But I just thought to write it now. Such is life.) We really have to think ahead here. When we harvest honey, we need to be sure to leave enough honey on the hives to carry them through March of the coming year when surplus honey starts coming in again because there is no fall nectar flow in our area.

If we have not over-supered, our bees filled the upper brood box with honey, which is ideally all capped by now. If we over-supered, there may be little capped honey in the upper brood box. In that case, I would leave a super of capped honey on the bees to get them through winter.

So, how do we get it right? As the nectar flow is winding down and there is wet honey in the top super, avoid the temptation to put one more empty super on the hives. Let the bees fill the upper-most super and then fill down the upper most brood box with capped honey. If we do this right, we'll not need to feed our bees.





Personally, I over-winter with two deeps and one medium (both in Charlotte and at Lake Lure, NC). For me the medium and upper deep are full of capped honey. I do not feed my bees sugar syrup. If I have extra honey left on hives in the spring, I either extract and sell it as a premium-priced “Bold Honey” (flavor intensifies as honey ages on the hive) or use the frames of extra capped honey as “feeders” for early spring splits in March...which I do not feed sugar syrup.

If our hives are light—because we over-supered, over-harvested or because they’re new hives that failed to build up enough honey stores during the nectar flow—we need to feed heavy syrup (2 parts sugar: 1 part water) right away. Earlier feeding is better to minimize robbing. (Feed a hive in September and watch it get decimated by robbers in minutes!) Even if we stop a robbing frenzy quickly, the hive will likely dwindle to nothing over winter.

Hopefully, this helps some of you to think about supering, harvesting and feeding in a different light. For me, feeding is not a part of

my beekeeping plan. It is an indicator that I failed somewhere along the line in my bee management. (Note: The only exception would be new hives—either nucs or packages—that were received after March. i.e. Nearly all first-year beekeepers!)

Why am I against feeding? I’m a treatment free beekeeper. I think holistically about my bee management. Nutrition is the backbone of keeping healthy, robust bee colonies that are able to resist mites, disease and any other pest(s) that may come their way. Nutrition is the foundation, if you will. If I short-change them on nutrition, then everything else I do to manage my bees is built on a weak foundation, and my operation is set up to fail.



Help for a Budding Beekeepers Project

by Gillian Margonis

Every senior at Myers Park High School has to complete a service learning project (SLE) that involves community work. For my topic, I chose the decline of the bees. I had always considered myself an advocate for the bees, but after diving deeper into the topic, it became evident that something needed to be done- fast.

Bees are the backbone of the ecosystem that surrounds us. As a keystone species, the niche, or role, they fill is essential to keep everything running smoothly. The bee's niche is pollination. Bees pollinate about one third of the food humans eat and 90 percent of natural plants. Without pollination, the majority of plants would not be able to produce fruits or reproduce. If the bees were gone, all the plant species they used to pollinate would eventually die out, causing a collapse in the ecosystem. I wanted to find a way to help the bees, and in turn, help the world. The people I have met during the project process have made this possible.

Through MCBA President Ed Moyers, I met two amazing beekeepers, Pat O'Connor and Meghan McDermott, both of whom allowed me to take pictures to incorporate into my project and taught me more about the bees than I ever could have imagined.



Mr. O'Connor allowed me to tag along when he was on a mission to remove a hive from someone's home. Unfortunately, there was no hive. The owner of the house had just been spooked by scouting bees. Through this experience, Mr. O'Connor taught me about the scout bees and how the bees find a new place to set up a hive. I then got to pass down this knowledge to my project review board.

With Mrs. McDermott, I got the chance to learn how to make hive boxes and got to explore the hives. Under her wing, I learned about hive disease, swarm cells, honey, queen bees and much more. The experience she gave me was life changing and one I will never forget. The time with Mrs. McDermott has inspired me to start my own hives when I am older.

The experiences I had and the knowledge I learned will guide me for the rest of my life. I will never stop working to save the bees. Hives will be built and flowers planted; anything to preserve the species that has given so much. To save the bees is to save the world.



What's Blooming in July: Smartweed and Lady's Thumb

by Matt Burgoon

Common Name: Smartweed, Lady's thumb, etc.

Botanical Name: *Polygonum spp.*

Plant Type: Herbaceous annuals or perennials

Typical Bloom Period: July - October

Nectar Usefulness: medium

Pollen Usefulness: medium

In the blazing heat of July we often find our friends “blooming” in places where plenty of water and rapid evaporation create a cooler microclimate. Likewise our honey bees will find the buckwheat family, *Polygonaceae*, blooming in swampy areas with full sun. Of the 220 species in the family, the three most common in Mecklenburg County are of the genus *Polygonum*:

P. persicaria, “Spotted lady's thumb”

P. punctatum, “Dotted smartweed”

P. pennsylvanicum “Pennsylvania smartweed”

P. setaceum, “Bog smartweed” or

P. sagittatum, “Arrowleaf tearthumb”.



Polygonum persicaria

Species of *Polygonum* can be difficult to distinguish, but their names hold some clues, and also they are all edible and our

tastebuds can help. Arrowleaf tearthumb has heart-shaped, or cordate, leaves. Lady's thumb has a dark “thumbprint” in the middle of the leaf. The smartweeds are so named because the flavor is very spicy and a very small taste will help identify *P. punctatum* or *P. setaceum*. That spicy taste corresponds with strong anti-fungal properties of the compound polygodial; the smartweeds are strong medicine for some intestinal disorders.

The species mentioned grow flowers in racemes at the end of the stalk. The flowers do not have petals, but have colorful sepals — usually pink — and they are fairly small and compact together on the spike. Inside each flower is a tiny nutlet.

Honey from these species varies widely in color and flavor. Some, from the smartweeds, even has a mild odor. *P. pennsylvanicum* is a good source of pollen.

Online resources for further reading:

Polygonaceae (buckwheat family including knotweeds) in Bee Culture:

<http://www.bee-culture.com/smartweeds-and-knotweeds-as-bee-plants/>

“Green Deane” on smartweed:

<http://www.eattheweeds.com/smartweed-nature's-pepper-and-pharmacy/>

More detail on medicinal use:

Alves, Tânia Maria de Almeida, Fabiane Lacerda Ribeiro, Helmut Kloos, and Carlos Leomar Zani. 2001. “Polygodial, the Fungitoxic Component from the Brazilian Medicinal Plant *Polygonum Punctatum*.” *Memórias Do Instituto Oswaldo Cruz* 96 (6): 831–33. doi:10.1590/S0074-02762001000600016.

The following is a rich source of native plant information: *Manual of the vascular flora of the Carolinas*. by Albert E Radford; Harry E Ahles; C Ritchie Bell Publisher: Chapel Hill, N.C. Univ. of North Carolina Press 1976, 1976



2017 MCBA OFFICERS

President: Ed Moyers (meckbeespres@gmail.com)

Vice President: Andrew Thiessen (meckbeevp@gmail.com)

Treasurer: Don Rierson (meckbeetreas@gmail.com)

Membership Secretary: Jodie Rierson
(meckbeesec@gmail.com)

Chaplain: Don Rierson

Webmaster: Kevin Freeman (meckbees@gmail.com)

Contact Us

Email us with questions at
meckbeespres@gmail.com

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Email submissions to:

Rachel.E.G.Woodhouse
@gmail.com

