U.S. ENVIRONMENTAL PROTECTION AGENCY

PESTICIDE PROGRAM DIALOGUE COMMITTEE MEETING

Wednesday, May 8, 2019

9:00 a.m.

DAY ONE

PARTICIPANTS

Walter Alarcon

Amy Asmus

Steven Bennett

Pat Bishop

Laurie Ann Burd

Iris Figueroa

Jim Fredericks

Eric Gjevre

John Gorman

Richard Gragg

Aaron Hobbs

Eric Hoffman

Sheryl Kunickis

Dab Kunkel

Dominic LaJoie

Charlotte Liang

Amy Liebman

Allen McLaurin

Damon Reabe

Charlotte Sanson

Sharon Selvaggio

Donald Taylor

Andrew Thostenson

PARTICIPANTS (cont.)

Liza Trossbach

Tim Tucker

Jay Vroom

Edward Wakem

Andy Whittington

Nina Wilson

P R O C E E D I N G S

DAY ONE - MAY 8, 2019

MR. KEIGWIN: Good morning, everybody. Welcome to the spring meeting of the Pesticide Program Dialogue Committee. We're happy that you all were able to join us today. We do have a few folks that weren't able to join us, so hopefully you're seeing a little bit more elbow room around the table today. Some additional members will be joining us tomorrow. I wanted to quickly just introduce to you all, you should know both of them really well, but both of the acting deputy officer directors for OPP, to my right is Wynne Miller, who is the acting deputy for management; and then to my left is Ed Messina, who is the acting deputy for programs. So thank you to both of them for joining us today.

I wanted to give you a couple of updates on some other management changes that have taken place in the Office of Pesticide Programs since our last meeting. I think there's an updated organizational chart in your folders, so just to highlight a few. Steve Weiss has now been made the permanent deputy division director in our Antimicrobials Division; Neil Anderson is now the permanent deputy division director in the Biological and Economic Analysis Division; Jan

Matuszko is now the acting associate division director in the Environmental Fate and Effects Division; while Kimberly Nesci is on detail as the acting director of the Biological and Economic Analysis Division; while Wynne is on detail to the position that she's in. So a few musical chairs going on.

Billy Smith is currently acting as the acting division director in the Pesticides Re-Evaluation Division; Yu-Ting Guilaran, who is the permanent division director, is currently on a detail for the next several months to the Office of Ground Water and Drinking Water in EPA's Office of Water. And then just yesterday, we announced that Anne Overstreet, who has been serving for the last year, approximately, as the branch chief for the Certification and Worker Protection Branch in the Field and External Affairs Division has been named as the deputy division director for Biopesticides and Pollution Prevention Division.

So yet another example of lots of movement in the program, but opportunities to continue to give people in the office different leadership opportunities and learn another aspect of the pesticide program activities.

So I want to thank you all for your time and

effort in participating on the PPDC. It is a very important role that you play in helping us move issues forward, having a dialogue on at times what can be some difficult topics, but difficult conversations often times result in good advice for the Agency and paths forward.

You'll see that we've tried to do something a little bit different with this meeting's agenda. We have fewer topics than we've had in the past. That is in part due to some feedback that we've received to try to provide some more opportunities for dialogue across members of the PPDC. And so for those topic areas that we won't cover directly today on the agenda, we have included some one-page summaries to give you all updates on those topics.

I want to just briefly review the agenda for the meeting. We'll kick off the morning with an update on the Pesticide Registration Improvement Act, the fourth version of that, which passed Congress and was signed by the President earlier this year, and we have a specific set of charges, or questions for you all to give us advice on certain aspects of the new reporting provisions in PRIA 4.

We'll take a break, and then after the break, we will receive a report from the Public Health

Workgroup under the PPDC. They've had a specific charge over the past year to present a recommendation on emergency preparedness planning, and then they also have some suggestions for what other topics that workgroup might work on in the future.

After lunch, we'll turn our attention to some new provisions for which a number of federal agencies have new responsibilities. We want to focus specifically on the hemp title in the Farm Bill, and get some input from you all on where we might go with some of our early implementation efforts for that new title.

And then we will end the day with a follow-up discussion from our last PPDC meeting regarding unmanned aerial vehicles, and again, an area where we'll be seeking input from PPDC members on how to move forward in developing some policy regarding the use of UAVs in pesticide application. And then we'll end the day with a public comment period.

And then tomorrow morning, Alex Dunn, who was confirmed as our Assistant Administrator for the Office of Chemical Safety and Pollution Prevention at the very beginning of the year, will join us for some opening remarks. For those of you who have met Alex, you know and you've experienced the energy and enthusiasm that she has for environmental protection

and environmental justice, and for those of you who haven't had the pleasure of meeting or hearing her, I think you will soon share that sentiment that she is a great addition to EPA and specifically OCSPP.

We will then have a presentation from our Biopesticides and Pollution Prevention Division regarding some draft guidance that we've recently issued regarding plant biostimulants, and this is an area where we're currently in a public comment period, but we thought this would be an opportunity to answer questions from the PPDC members that could potentially help inform any public comments you wanted to submit in response to that open public comment period.

And then after a break, we wanted to have a discussion with you all about how we could strengthen the effectiveness of the PPDC, particularly as we work on a rechartering of the PPDC that has to happen this year, as well as a solicitation for new membership.

So even though we have fewer topics, we think it's a very robust agenda, and we're looking forward to receiving your advice today.

A couple of housekeeping measures. If you haven't had the opportunity yet, please sign in at the registration desk. You can do that at the break. And we ask that not just members of the PPDC, but members

of the public do that.

Same type of system as we've had before regarding the audio system. If the red light is on, it means your mic is live. When you want to make a remark or ask a question, turn the tent cards up. The teleconference line is open and we do have a couple of PPDC members that are participating today remotely. So when we do the go-around, we will start with them so that you know who's on the line remotely.

We do have a global mute on the line, but when a member wants to speak, we will mute and unmute so that they can speak. And then for members of the public who are joining us today, we will have public comment sessions, both this afternoon and then again tomorrow morning. If you're interested in making a public comment on any of the topics that we discuss today, or any other topic, please sign up at the registration desk and we will hear your comments during the designated public comment periods.

And then, finally, just a reminder that in the event of an emergency, please note that there's an emergency exit door here at the front of the room. It's this door right here that looks like it's covered up by a shade, but that is the emergency exit.

So with that, if we could do member

introductions and let's start with PPDC members that are on the phone.

MR. THOSTENSON: This is Andrew Thostenson with North Dakota State University in Fargo, North Dakota, representing the American Association of Pesticide Safety Educators.

MR. GRAGG: This is Richard Gragg at Florida A&M University in Tallahassee, Florida.

MS. FIGUEROA: Iris Figueroa from Farmworker Justice.

MR. KEIGWIN: Thank you to Andrew, Richard and Iris. I think those were the three individuals that we had participating remotely. And then let's start with Cheryl.

MS. KUNICKIS: I'm Cheryl Kunickis, I'm the director in the Office of Pest Management Policy at USDA.

MR. GJEVRE: Eric Gjevre representing the Tribal Pesticide Program Council, Coeur d'Alene, Idaho.

MS. TROSSBACH: Good morning. I'm Liza Fleeson Trossbach with the Virginia Department of Agriculture and Consumer Services and I'm representing the Association of American Pesticide Control Officials, or AAPCO.

MS. LIANG: Charlotte Liang, U.S. Food and Drug Administration, Office of Food Safety.

MR. ALARCON: I'm Walter Alarcon, CDC NIOSH.

MS. ASMUS: Amy Asmus from Asmus Farm Supply in North Central Iowa representing the Weed Science Society of America.

MR. WAKEM: Edward Wakem with the American Veterinary Medical Association.

MR. BENNETT: Steve Bennett with the Household & Commercial Products Association.

MS. SANSON: Charlotte Sanson with ADAMA representing the Commission on Crop Protection Industry.

MS. BISHOP: Patricia Bishop with the Humane Society of the U.S.

MS. LIEBMAN: Good morning. I'm Amy Liebman with the Migrant Clinicians Network.

MS. WILSON: Hi, I'm Nina Wilson with Gowan Company representing the Biological Products Industry Alliance.

MR. VROOM: Hi, I'm Jay Vroom, retired from CropLife America, still a PPDC member. I am now consulting for a variety of agribusiness technology companies. Pleased to be here.

One of my volunteer jobs in retirement is I'm

the gardener at USDA. If you don't know, there's a garden nearby the USDA headquarters building, and in partnership with the Farm Journal Foundation, we're bringing some private sector engagement to the garden demonstration. All 26 Farmers Market Fridays this year will have special features around the garden that expand the public outreach with regard to modern agriculture there, and if you're interested to know more about that, see me, please.

MR. WHITTINGTON: Andy Whittington with the Mississippi Farm Bureau FEDERATION representing American Farm Bureau Federation.

MR. LAJOIE: Good morning. I'm Dominic LaJoie, I'm a farmer from Maine, I'm representing the National Potato Council.

MR. HOBBS: Aaron Hobbs of RISE.

MR. HOFFMAN: Eric Hoffman, Armed Forces Pest Management Board.

MR. MCLAURIN: My name is Allen McLaurin, I'm a cotton farmer from North Carolina, I'm representing the National Cotton Council.

MR. TUCKER: I'm Tim Tucker from Kansas and I represent the American Beekeeping Federation and really all beekeepers large and small across the country.

MS. SELVAGGIO: I'm Sharon Selvaggio with the Northwest Center for Alternatives to Pesticides.

MR. TAYLOR: Donny Taylor, Ag Retailers Association.

MR. KUNKEL: Dan Kunkel, IR-4 project, Rutgers University.

MR. REABE: Damon Reabe, I'm an aerial applicator from Wisconsin representing the National Agricultural Aviation Association.

MR. GORMAN: John Gorman, I'm the chief of pesticides and toxics in EPA Region 2 and I'm here representing the regional offices of EPA.

MR. SCHAIBLE: Steve Schaible, PRIA coordinator for Office of Pesticide Programs.

MR. KEIGWIN: Okay, so it sounds like we have two mics that are not working, so we will switch them out, but maybe for this first session, Tim, if there's a -- is there a portable that we can use so that you, Sharon and Laurie Ann and John, any comments that they have, we can all hear.

So our first topic is going to be an update on what's new in PRIA 4, the Pesticide Registration Improvement Act. So Steve is going to walk you through an overview of the changes between PRIA 3 and PRIA 4, and then as I noted in my opening remarks,

PRIA 4 has some new reporting language that we need to include in our annual report, and a good part of those new reporting requirements focus on measuring the effectiveness of our worker safety programs that are funded through a set-aside from the fee account.

So as we embark upon addressing those new requirements for the annual report that will issue in the spring of 2020, we wanted to get some input from you all on how we might go about beginning to collect that information. So with that, let me turn things over to Steve.

MR. SCHAIBLE: Thank you. And good morning, everybody.

So, yeah, so we're going to go through what are the new provisions of PRIA 4. Just to start off, I'd like to thank all the different stakeholders in this room that were instrumental in getting PRIA 4 to the finish line. It's good having it in place instead of waiting to see if it would get into place.

So PRIA 4, the Pesticide Registration Improvement Extension Act of 2018, that was signed into law by the President on March 8th of 2019. It re-authorizes PRIA for five years starting in March of this year and going through fiscal year 2023. One of the provisions is that it extends prohibition on

collection of fees, registration fees, as well as tolerance fees that were in place. So those fees cannot be collected for the duration of the fee collection under the PRIA registration service fees.

Prior to PRIA 4, there's historical language under Section 5 of FIFRA that talked about completing experimental use permits in I think it was 180 days. That was not congruous with the PRIA time frames we had for the EP categories for new EI categories, they're as much as I think 21 months. So we -- the language was revised in Section 5 to refer to the time frames in the fee tables.

So PRIA extends the -- so PRIA extends two fee authorities. The first I'm going to talk about is the registration fee authority, service fee authority. That was extended again for five years. The number of categories was increased from 189 categories in PRIA 3 to 212 categories under PRIA 4. So this continues the expansion each time we re-authorize to more and more categories.

So category changes I want to highlight. These are not all the changes that occurred under PRIA 4. The first is there were no amended categories to capture increased number of target passes for which we are receiving data. This is for public health tests.

And so these would relate to the invertebrate tests and vertebrate tests that RD handles, as well as the different organisms that AD handles. And basically, as the number of tests or organisms involved in their view increases, there are categories that have increases in time and in fee collection for those categories.

Likewise, a very similar dynamic exists for combination products. There was a category under PRIA 3, R314, that handled new product registrations that involved combinations of active ingredients that had never been registered in combination before. This is to reflect that we're looking at multiple chemicals and labels for all the registered products under each of those chemicals and making sure that the most protective language for each of those actives is on the combination product.

So going through the course of PRIA 3, we started seeing more and more instances of products that had combinations of seven or eight active ingredients and we were finding that we were having to negotiate those actions because there were so many active ingredients involved. And so we created a number of categories to reflect the increase in the number of AIs being considered in those products.

The R292 category, this is a tolerance amendment. The definition of that category has expanded to include the activity of harmonizing existing tolerances to align with Codex MRLs. This is where there is no information on the label or no new data being submitted that would require science review. Basically it's an exercise where if you have an active ingredient and there were seven existing tolerance for which Codex MRLs exist, which are not in alignment with BS tolerances, under the single R292, you can get all of those aligned to match the Codex MRLs, or the Agency will evaluate the feasibility of that.

There were new experimental use permit categories created for AD, BPPD and RD categories. The AD A codes were sort of across the board modified to be consistent with part 158W, the definitions of indirect, direct and nonfood. Those categories also were streamlined and there are actually fewer AD categories under PRIA 4 than there were under PRIA 3.

New fifth categories were created under the V codes. For the inert safener categories, there were not categories under PRIA 3 for inert safeners. Safeners are inerts that protect the target crop from herbicide application while allowing targeted -- while

targeting the weeds. So these typically involve large data sets, data sets that are more in alignment with new active ingredient applications, and require the full new AI type risk assessment on the Agency's part to make the determination on whether they would be cleared or not.

So the categories under PRIA 3 were -- we were having to negotiate every time we had a safener come in. And so these categories were created to allow the time and the resources to conduct the review of those without necessarily having to negotiate.

Also, the inert categories as a whole were introduced in PRIA 3, and I think through the experience of PRIA 3, we were able to determine which categories did we get it right on as far as the time it took to do them, and where there were categories that we were consistently having to negotiate the due date. In PRIA 4, the recommendation was made to increase the time and/or money for those categories. So basically we were able to leverage the experience we gained under PRIA 3 to adjust the category times and fees.

There were two categories that were created under the miscellaneous table. The first is for non-FIFRA regulated determinations. And so examples

of these would be minimum risk determinations under 25B, treated article exemptions, device determinations. And so those are three that I think we feel the main engagement is going to be. There may be others. I think that's something that if you think there's something that would fit under this, certainly reach out to us and we would be willing to have that conversation.

The second is a conditional ruling on a pre-application of substantial similarity determination. And so this is something where for your me-too new product categories, there is an expedited time frame for AD, BPPD and RD categories. If you wished, you could submit the information before your registration application and we would make a determination from the materials that you submitted on whether it seems that the substantial similarity was supported based on the information provided.

Both the non-FIFRA determination and the substantial similarity determination are voluntary activities. That's not something that you have to do. I think that the people that were in favor of either of these -- well, certainly under the substantial similarity, were interested in having more certainty around what the time frame might be before they

submitted the actual section 3 registration application.

So if you have a similarity determination from the Agency, and you're submitting the same information to support your registration application, the answer, you know, logically should be the same answer instead of having it recoded as a nonexpedited category once you submit the section 3.

With regard to gold seal letters, these are one-month activities where a registrant is submitting a request to the Agency for documentation that a pesticide is registered in the U.S., is currently registered in the U.S. Given that it only takes one month and that the category was $253, the amount of resources it took us to make the small business waiver determination was more than the fee. So PRIA 4 eliminates the small business waiver.

The clean label resolution time period process is introduced in PRIA 3, and applied to intermicrobial actions, and conventional actions under the R codes under PRIA 3 was expanded to now include biopesticides that have label considerations.

PRIA 4 allows for two 5 percent increases. The first is going to start at the beginning of FY20 and will run through FY21. And the second will begin

in the beginning of FY22 and run through FY23.

PRIA 4 extends the PRIA 3 setasides through 2023 for the worker protection activities. The amount there is 1/17th of the fund but not less than one million per year. Typically we've been putting one million a year towards those activities and those crop root agreements.

The second is a $500,000 setaside per year for partnership grants, and the third is $500,000 a year for pesticide safety education program.

So now I want to move on to maintenance fees and changes for maintenance fees under PRIA 4. PRIA 4 extends the maintenance fee collection authority for five years, going from FY19 to the remainder of '19 through FY2023. PRIA 4 extends the maintenance fee collection target under PRIA 3, or it increases it, sorry. Under PRIA 3, it was $27.8 million a year, and that is increased $3.2 million to $31 million per year.

For FY19, we had already invoiced for maintenance fees back in December under the PRIA 3 extended authority through the continuing resolution. And so we are going to maintain that target for this year.

PRIA 4 also includes a provision that allows

AE to average across years within PRIA 4 to correct for over or undercollection in previous years. And so I think the intention on our part is to take that $3.2 million that was not invoiced for in FY19 and to extend that or to average that for an additional $800,000 a year for the remaining four years of PRIA 4.

PRIA 4 eliminates the appropriations constraint on spending maintenance fees. This is called the one-to-one provision, and basically what it said was that before the EPA had to spend a dollar of appropriations if we were going to spend a dollar of the maintenance fees. And this had the unintended consequence over the last many years of building up a maintenance fee backlog or surplus. At the end of FY18, it was around $44 million. So now that this constraint is removed, we will be able to more fully access those maintenance fees and we're developing a spend down plan which a large part of which will be putting those monies towards meeting our statutory obligations to complete reg review for the first round by September 2022.

PRIA 4 raises annual fee caps for registrants, including small businesses. Also for maintenance fee changes under PRIA 4, PRIA 4 specifies

those fees can explicitly be used for reg reviews to offset the costs of endangered species assessments. This is something that I think where we were engaged in endangered species activities under PRIA 3, we were doing it, but now the law clearly says that that is something that we can use those maintenance fees towards.

The setaside for review of inert ingredients and the expedited processing of substantial similarity applications and public health pesticide applications, that's a setaside of between 1/9th and 1/8th of fees collected in a year goes towards those activities. PRIA 4 extends that setaside.

The IT setaside that was established in PRIA 3, and this was a setaside of up to $800,000 per year for a number of IT activities which were improving the electronic tracking of registration submissions and electronic tracking of conditional registrations. Also the electronic review of labels, e-CSF, and endangered species knowledge database enhancements. So that setaside goes away, but we do have a remainder of that setaside money that we're continuing to utilize, and in our PRIA annual report, we will be indicating what amount is spent each year, as well as what it was spent on.

The IT setaside is replaced with a new setaside of up to $500,000 a year to support efficacy guideline development and rulemaking for invertebrate pests of significant public health or economic importance. And so these, as an example I think there's a bedbug guidelines, premises. So there's five different deliverables there.

PRIA 4 also lays out a mandatory schedule for when those activities will be completed. And so this will be taking these draft guidances to the SAP and putting out for public comment, and then based on the feedback we get from SAP and the public, then finalizing that guidance and instituting rulemaking to formalize those.

The new setasides is created also for -- to support GLP inspections. GLP is good laboratory practice inspections, and so that's up to $500,000 a year as well. PRIA 4 specifies that EPA will provide a preliminary summary of inspection observations to be provided to the laboratory not more than 60 days after the completion of the inspection. And this is somewhat of an anomaly of how PRIA 4 went through Congress, but those two setasides are actually authorized for six years, starting in FY18, through 2023, and in practice, we will -- well, I won't get

into that. But yeah, we think we'll probably be funding it for the five years, '19 through 2023, because the law indicated that we shall not spend more than those amounts.

Next I want to talk about some of the reporting requirements in PRIA 4, the new reporting requirements for PRIA 4. The first I want to talk about is reporting requirements for registration review decision capture requirements. And so as we have been moving through reg review, we have completed our work plans and we're now into the stage where we're getting some of these interim decisions completed, and instituting -- as we're further down through the steps of reg review, we're reporting out on our progress. And so the first is the number of reg review cases that have been cancelled. Also reg review cases with risk mitigation, with mitigation rolled back, cases that did not need mitigation, and finally, the number of cases fully implemented.

So this is something that we have been working on internally. The prism module under which we track reg review cases, a module was developed to capture these decisions, training and -- so population of that module has been ongoing, training has been ongoing, and we're currently developing reports that

will be able to provide this information to managers, both for the annual report, but also for tracking throughout the year.

There is a reporting requirement on the description of the amount and the use of the PRIA setaside funds. So this is -- these are the existing -- these are in PRIA 3 as well, but, you know, what were the setaside funds that were spent each year towards the $1 million or up to $1 million for the worker protection, for the partnership grant and for the PSF program, but there's also some new reporting requirements, and this is what our charge questions are directed towards.

The first is the EPA is to provide an evaluation of the appropriateness and effectiveness of the activities, grants and the PSF program. The second is a description of how stakeholders are engaged in the decision to fund some activities, grants and the program. And finally, and this is with respect to the worker protection activity setaside, a summary of the analyses provided by stakeholders, including the community-based organizations, on the appropriateness and the effectiveness of such activities.

Would you guys like me to go through that

again, given that you weren't looking at it? Sorry about that. Maybe I should delegate the advancing. I lost my privileges.

So moving on to some other requirements. The IT setaside requirement, I did speak about that previously. Though the setaside does not exist under PRIA 4, we will continue to report out on the monies spent under that setaside until that setaside is drawn down.

There is a reporting requirement to identify reforms to streamline new AI and new use processes, and to provide prompt feedback on applicants during the process. Secondly, we'll report on the progress in meeting a mandatory schedule and developing the efficacy guidelines for invertebrate pests of significant public health and/or economic importance. So this is the other setaside. Basically we'll be reporting out on whether or not we are meeting the deadlines prescribed in the law.

Also, the number of GLP inspections and audits conducted. And so this speaks to the GLP setaside on enhancing that program. On the ground I think what that's going to look like is we will be hiring up some additional people using that money and the number of inspections will increase.

There's a reporting requirement on the progress and priority review and approval of new pesticides to control invertebrate public health pests that may transmit vector-borne disease for use in the U.S. This includes the U.S. territories and also U.S. military installations globally. And so these will be new chemicals, new uses, new products across the board. We'll be reporting where we are registering tools that can meet that need.

PRIA 4 -- Section 6 and Section 7 of PRIA 4 is a provision that stipulates that EPA from the date of enactment through 20 -- FY20 will fully implement the Agricultural Worker Protection Standard Revision Final Rule published in November of '15, as well as the Certification of Pesticide Applicators Final Rule that was published in January of '17.

The EPA shall not revise or develop revisions to these rules, with the exception being that EPA may propose and after a notice and public comment of not less than 90 days promulgate revisions to the WPS rule relating to the application exclusion zones. And also the section directs GAO to conduct a study on use of a designated representative, including the effects of that use on the availability of pesticide application and hazard information and worker health and safety.

And also, not later than October 1st of '21, make publicly available a report describing that study, including any recommendations, to prevent the misuse of pesticide application hazard information if that misuse is identified.

As far as resources available to people who would wish to send in a registration application under PRIA 4, the PRIA 4 web pages or the PRIA web pages have been updated to be reflective of PRIA 4, and specifically, I think the tools that are most commonly used, the PRIA fee tables, the fee determination decision tree, and the interpretation pages have all been updated to be reflective of PRIA 4 category descriptions and fees. And so the links there are to those tools.

If you have any PRIA 4 related questions and can't find the answer on the PRIA web pages, do please contact your division level ombudsman via the mailbox, or myself as well. I have been getting a lot of phone calls and emails and then I'm happy to sort of help steer you guys through understanding any of the new provisions in PRIA 4.

And the next page is just those resources. I know, so for RD, they in the last year have created a mailbox that allows both the person serving in the

ombudsman role as well as the branch chief and team leaders to all be able to access those questions. And so for AD, Diane Isbell is the ombudsman, and but there also is the ombudsman mailbox, and then Andrew Bryceland in BPPD, and there's also a general questions mailbox for the biopesticides.

That concludes the update for PRIA 4. Do you have any questions around that? Do we have time?

MR. KEIGWIN: Why don't we first see if members have questions about the changes to PRIA 4, and then once that's completed, we can move to the charge questions for the session. So I see Nina's card up, so we'll start with Nina.

MS. WILSON: Thanks, Steve. How are you? Yeah, I have a question with regard to the PRIA category for harmonizing tolerances. Is there a potential that that -- here's the feedback -- that category could be used for the pilot program?

MR. SCHAIBLE: So the pilot program as I understand it is relating -- is it relating to import tolerances or --

MS. WILSON: Yeah.

MR. SCHAIBLE: Okay. So the revision under PRIA 4 to the R292 category is meant to relate specifically to situations where there are currently

published U.S. tolerances.

MR. KEIGWIN: Okay. Charlotte?

MS. SANSON: Yeah, thanks. So I've got a few questions. So the first one is I think there's some expectation there would be some relief on the resource side within OPP relative to, you know, passing the PRIA 4, the additional funding, this sort of thing. So I was wondering if you could speak to that. I know you all have mentioned, you know, how you're recruiting to add staff, that sort of thing, but can you speak to how PRIA 4 will help in that regard? And then when you're done with that, I'll have a question.

MR. SCHAIBLE: On the PRIA side, I think that there are some increases in fees that hopefully will help with the timeliness of our decisions. I think our fee collections, our projected fee collections on the registration fee side, we're projecting that there will be more collections than I think that we would hopefully be able to hire up with some of those fees.

I think the main pot of money that will be available to us under PRIA 4 is going to be more fully utilizing the maintenance fees that we will be collecting moving forward as well as the maintenance fees that have been collected in the past. I think a

large -- and I think we are already intending, we have -- we're developing a plan to hire under utilizing those fees.

I think, again, a lot of those are going to go to reg review, but maintenance fees in terms of the allowable activities under maintenance fees, you could theoretically -- those maintenance fees can go towards review of fast track amendments, inert clearances, public health pesticides. And so I think that that's where we're looking to utilizing those resources.

Rick, do you have anything to add to that?

MS. MILLER: Yeah, and one of the other things that is helping, too, is that the elimination of that one-to-one provision, that's going to be helping, too, because we don't have to keep that in mind constantly like we did with that one-to-one with EPM. That was kind of one of the limitations that we had before on hiring, but we are trying to get -- I mean, I think we've said this in other meetings that we've had with other groups, that as soon as someone comes in the door, we have someone walking out the door. So it has been a struggle to keep up with the hiring for folks who are retiring. And, you know, I think we had back in October 2017, we had around 600 and some people on board, and then fast forward a year

and something later, we had hired about 70-some people and we had almost 80 walk out the door. So we were just barely keeping up.

But one of the things that we've been working really hard on is down in our shared service center in Research Triangle Park is that, you know, there are certain processes that we have to go through when it comes to hiring. So now that we understand the things that they've been looking for, it's making it a little easier and we've noticed that things are getting a little faster in regards to hiring, although we still kind of have to jump through some of those hoops. But definitely, Charlotte, where we've gotten rid of that one-to-one, that's going to help free up funds for, you know, those resources for the hiring as well.

MS. SANSON: Thanks, I appreciate that. I think I had heard that. I think I had heard Steve say that about $40 million that you're spending down, a lot of that would go to reg review, but you're saying that a lot of that will also be spent on the resources that you need to hire. Okay. Thank you for that clarification. That's good.

Okay. Second question. If I can continue. So the maintenance fee collection of $31 million that you're targeting for 2019, how do you plan to collect

that difference this year?

MR. SCHAIBLE: So for this year, we're going to -- we invoiced for the $27.8 million. That is going to be our target for this year. So there's a $3.2 million differential that will not be collected this year. Using the averaging provision that PRIA 4 allows, we're going to apply that $3.2 million, divide it equally over the next four years, and so next year's target is going to be $31.8 million, and that will continue for FY21, '22 and '23.

MS. SANSON: Okay, so that's what you were referring to in the bullet below that.

MR. SCHAIBLE: Yeah. So the $3.2 million will be collected over the next four years.

MS. SANSON: Okay. I appreciate that. Okay, good. And then there was also in one of the -- in the setasides on the reporting requirements, there was an item there on identifying process improvements for review of new active ingredients, new uses and that sort of thing. So I was wondering if you've had an opportunity to think about like what's your vision for how that will play out?

MR. SCHAIBLE: I think we're interested from the stakeholders on hearing your ideas around what you think that looks like. I mean, I think largely driven

by sort of some lean exercises and monthly measures tracking that we currently are engaged in. We have been working towards streamlining our new AI decisions and trying to reduce the time frames for those decisions as well as the average extension beyond the original due date for those.

I think at the July PRIA stakeholder meeting, I think we are going to be dedicating some time at that meeting to some of the additional reporting requirements and hearing from the stakeholders around what are your ideas around that.

MR. KEIGWIN: Okay. Tim?

MR. TUCKER: Yeah, Steve, I was just wondering on this 1/17th of the fees that are collected, the million dollars for public safety or pesticide safety education, do you have any record of how those funds have been spent in the past? Is that accessible to the public?

MR. SCHAIBLE: Yeah. Right. So there's the worker protection activities and there's cooperative agreements that are set up under those activities, as well as the partnership grants and the pesticide safety. Those are -- we report out each year on those, the amount spent and what were the accomplishments under those cooperative agreements in

the PRIA annual report. So if you look on the PRIA web page for each of the previous years, that information is provided.

MR. KEIGWIN: Okay. I think, Tim, if memory serves me, I think at the fall PPDC meeting, we spent some time going into detail, but I can check at the break and share that with you, just so that you have a fuller understanding of how we've been allocating those funds.

MR. SCHAIBLE: Are you interested in all three of the setasides or specifically the pesticide safety?

MR. TUCKER: (Inaudible.)

MR. SCHAIBLE: Yeah, we'll follow up with you on that.

MR. KEIGWIN: Amy, I thought I saw your card go up.

MS. ASMUS: I thought you were talking about your questions that you had, but you're still --

MR. KEIGWIN: Yeah, we're still on the general questions about PRIA 4. Dan?

MR. KUNKEL: Thanks, Rick. Maybe just a quick -- the GLP setaside, the $500,000, you're working with the office of enforcement, and I thought that was for pay for FTEs. Does that include travel?

Because a lot of the audits are required travel to the various laboratories, et cetera.

MR. SCHAIBLE: So historically, we have not used FIFRA maintenance fees to support travel. So -- but obviously to augment the good laboratory practice program for bringing people on, you need to -- we need to find a way to support them actually conducting the audits. So we are currently discussing with the Office of General Counsel what latitude we have as it relates to the GLP pieces to use part of that setaside to support their travel. So we don't have a final determination yet, but obviously an important part of supporting those additional resources.

MR. KUNKEL: Actually, I have one final piece. Tim, just to follow up on your question. One clarification to make, the PRIA setaside funds are part of what goes to these cooperative agreements. We're also using appropriations money. So the full amount that supports those cooperative agreements isn't just the PRIA money, it's also appropriations as well. And I believe Jeannie or Anna, can you speak to that? Do you guys make that information publicly available as well?

MR. KEIGWIN: Just on the money that goes towards the different cooperative agreements and

activities. So we'll include links for that as well.

MS. SANSON: I do have a clarifying question on what you just talked about. So there's a lot in PRIA 4 now that talks about, and we're going to talk about in a minute, the effectiveness and how to assess that. So if you are combining appropriations or combining appropriation dollars with the PRIA 4 dollars, are you going to use the same set of standards and look at the effectiveness and the appropriateness and how those dollars are used?

MR. KEIGWIN: So just to clarify so I understand, Amy. So your question is if we supplement the fee dollars with Congressionally appropriated dollars, are we going to look at that total pool of dollars allocated and apply the same effectiveness standards? So the answer to that is yes.

Jay?

MR. VROOM: Related to the resource question for GLP work, how is that being conducted between OPP and OECA going forward? Are there any new operational effectiveness efficiency steps going on there?

MR. SCHAIBLE: Yeah, we've met with OECA. I think at this point we are providing them guidance on how we have implemented the IT setaside under PRIA 3, and I think they're very interested in how do they

access funds, but we've also been having discussions that have included our legal counsel around what are the allowable activities, what activities can the funds be spent for or not spent for.

And so I think at this point we're sort of bringing them up to speed on what are the ways in which they can access and use the funds. I think, again, at the July PRIA meeting, I think we're going to be seeking feedback from the stakeholders on what is their definition of enhancements to the program. The conversations we've had so far, I think that we're aware of some of the concerns that have existed and for which the setaside was created from the industry standpoint, but I think we are interested in getting feedback on that.

MR. VROOM: So the PRIA stakeholder process would be the mechanism through which stakeholder input could come, then, not through PPDC?

MR. SCHAIBLE: We haven't -- it's not a charge question today, but Rick?

MR. KEIGWIN: So, you know, we have our PRIA, the stakeholder quarterly meetings that the registrants attend. We also have periodic meetings with our NGO colleagues, and then we can also use this forum as well. I think why we wanted to focus on the

worker safety setaside piece today is that there may be some other things that we need to put in place between now and next year at the reporting cycle, and so getting some early feedback on that part was critical to us.

Laurie Ann? If we can find you a mic' that works.

MS. BURD: I was wondering how much spending is going on on the ESA assessments and what activities specifically are being funded by these PRIA funds.

MR. SCHAIBLE: So I know we prepare a report for Fish & Wildfire Service every year on how much we've spent. I don't have that at my fingertips, but we can get that figure for you.

The work that we are doing in registration review to support the development of biological evaluations and even the prework that goes into the draft risk assessments that then move on to inform the development of BEs, we use the FIFRA maintenance fee accounts for. So we are -- there's a good chunk -- all of our registration review work will ultimately lead into BEs, whether necessary. So there is that starter process, but we specifically report out to Fish & Wildfire Service every year what we spend on ESA, particularly regarding implementation of

biological opinions, and we can get that information for you.

I just wanted to check real quick with Iris, Richard and Andrew to see if they had any questions relative to the changes in PRIA 4. So we will unmute the line. Any questions from Iris, Richard or Andrew?

MR. GRAGG: Richard doesn't have any questions on the PRIA.

MR. SCHAIBLE: Thanks, Richard.

MS. FIGUEROA: This is Iris. I don't have questions, just feedback on the question about reporting, but I can weigh in on that later.

MR. SCHAIBLE: Okay. All right, so we're going to mute the line again, and we'll move to the charge questions.

So there are three charge questions so we would like to get feedback on today. The first is how should EPA go about addressing new reporting requirements specified in PRIA 4 for PRIA setasides for worker protection activities, partnership grants and pesticide safety education program. So why don't we start off with -- you know, start off with that one.

MR. KEIGWIN: Okay. Amy?

MS. ASMUS: Well, I kind of think they do all go together. So I don't know why there's so much -- so do we need to separate these three questions?

MR. KEIGWIN: We can handle them all at the same time. If it helps with the dialogue and giving us advice, we can handle them all at the same time.

MS. LIEBMAN: Because basically to report about some of these requirements, you're going to want to sort of understand how they're evaluated. So I have several suggestions, and there's a wealth of evidence-based literature on evaluation, and one of the key pieces in doing any type of program would be, you know, formative evaluation, which is how you sort of get input and feedback and how you go about sort of designing, you know, the program, how you get feedback on drafts of the products.

And so I want to really encourage the Agency to think about who is involved in that kind of conversation and which stakeholders are a part of that. And so obviously I'm representing the farm worker interests here, and I would like to see a lot more involvement all throughout the evaluation process, but particularly on the front end of the farm worker community.

So and just to give an example of what I am

talking about is that in the WPS one-pager that you have, you talk about -- you talk about a lot of process indicators, and we trained -- you know, 150 trainers reached this number of farm workers, we developed a video and we distributed materials. That really, that's process, which, you know, you need to tell us about, but that's not going to cut it with under new PRIA. And it shouldn't have been cutting it before, but you need to sort of take it up.

So, for instance, in developing that video, a draft video should have been produced, you engage farm workers, or even before that, you talk to farm workers about what do they think needs to be in it. You then go back to the drawing board, you produce your video, you go back and you talk to farm workers, because they're going to be your end users for this training video, right? And then you evaluate its effectiveness. You know, is it getting the messages out? You know, is it changing their knowledge? And then if it's not, you go back and you make that product stronger.

And then ultimately when you put it out for use, you continue to evaluate that effectiveness. And that takes knowledge, it takes the ability to sort of understand the farm worker community, and it takes

funding. So having, like, you know, an advisory committee is great, but that's not going to -- that's not going to cut it. And it does take time and effort to engage the farm worker community.

So, you know, for all of the work that's involving sort of the end stakeholder, or is targeting the end stakeholder, that group needs to be a part of the process from the very beginning. And that's one piece. And I do encourage the Agency to really think about those -- the different levels of evaluation in terms of how they incorporate that into their cooperative agreement.

Another point to consider in terms of that these dollars that are going out, is what agencies are they going out to? And right now, it's like UC Davis seems to have the corner on the market, and Oregon as well. And why is that? That doesn't make any sense from the number of stakeholders involved that it should be sort of monopolized by a few institutions who arguably may or may not -- you know, they may have some sort of linkages or connections with the community, but, you know, I don't see the universities as the best place to be reaching the farm worker community. So you really need to think about diversifying that.

And then another piece of the grants that go out the door for the cooperative agreements, is we've always heard from the Agency like, oh, you know, we gave that money, and we can't tell the grantees what to do. That's not true at all. And that really needs to be integrated into the effectiveness in looking at how you assess these programs. Because if you -- evaluation is circular. It's ongoing.

So as you get feedback, as you understand how to strengthen the program, you want to be able to go back to the people that you've given grants to, and cooperative agreements allow you some of that flexibility to say, you know what, this isn't cutting it. Or, you know, this is what we're hearing, or this is what you're showing from these results.

So all of that needs to be sort of integrated into your process. How you design your cooperative agreements is, again, part of this informative process for looking at how effective your ultimate product is going to be.

So the writing of those cooperative agreements and how -- what they specify. Are they going to be reviewed in a way that you're ensuring inclusivity? You're ensuring stakeholder involvement?

So those are just some of the initial suggestions. I'm happy to talk in more depth about it, but it's up until now, it's been a very close process in terms of the design of the requests for the funding announcements that go out, how is it that they appear? And they have a set of criteria of what should be in them, and then they get reviewed.

And so that process I think is pretty broken right now and will -- has a lot of room for improvement, and when improved, can assist you in terms of making sure that what you're funding is appropriate and effective.

But at a minimum, I don't -- it's not acceptable to the farm worker community or a stakeholder that cares about this to simply give us your process numbers. That's not going to cut it. And if that's what you want to do, then it's not in the spirit of PRIA at all.

MR. KEIGWIN: So thanks, Amy. I think we agree with you that certainly what we have been reporting out is outputs, and you read off some of them, and we believe the purpose of the reporting language is to go beyond that, and it's an important part of why we're having this dialogue this morning is to help us get from reporting outputs to outcomes.

This has been a topic not necessarily on worker protection, but on just performance measurement that's come before this committee on a number of occasions, and it's always easier to report outputs, it's always more of a challenge to report outcomes.

So thank you for your feedback and some suggestions on how we can begin to move more towards an outcome oriented performance discussion.

I know Iris had wanted to say something on this topic, so if we could open the line for her, and then we can see what the members might want to say.

MS. FIGUEROA: Thanks, Rick. Yeah, so to echo what Amy just said and also some of what you said about outcome versus output, and we're also happy to talk further about this with you in more specifics, but I think the bottom line is the evaluation has to be qualitative as much as quantitative, and we really need to make sure that we are evaluating whether the trainings and the materials is actually resulting in the retention of the information or a change in the behavior of the end users and is actually making an impact on the ground. So that's really what we want to focus on, that language we think is meant to focus on.

MR. KEIGWIN: Amy?

MS. ASMUS: I just wanted to let you all know that through the National Institute for Occupational Safety and Health, NIOSH, they support more of these ag centers around the country. And one of the projects within that ag center is looking at the effectiveness of some of the worker protection standard materials and also developing a well-tested and culturally appropriate training.

So I would love to keep you all posted on the results of that study, but the preliminary -- the preliminary findings are showing pretty significant difference in the curriculum that they've developed and the process for training versus a farm worker seeing through a video.

So there's -- and so there is work on the ground that EPA isn't even funding, but your federal partners are, and I think it will be very important to stay connected and aware of some of those things and basically learning from that and incorporating it into the work that you're doing.

MR. KEIGWIN: Thanks, Amy.

Tim, did you want to -- did you have a comment on this piece? Please.

MR. TUCKER: I was just wondering if you had considered a workgroup or a committee, because the

scope of this seems so broad, and stakeholder involvement would be critical. Have you thought about that?

MR. KEIGWIN: I might throw that question out to the whole committee and see what interest that might be and if that's a recommendation that this committee wants to put forward to the Agency to form a workgroup to help flush out these evaluation criteria a little bit better. So we might do a call at the end. I'll go to Amy, Iris and then Andy.

MS. LIEBMAN: As an end user of these products, I think it's very important for the EPA to work together with the different stakeholders. We do do safety training with our farm workers, with our ag retail workers. We work with a company called AsMark, Ag Retailers Association works a lot with us to make sure that our people are properly trained, not just with videos, but with hands-on training as well.

One request that I would have as an end user is please work together, because when I get one arm telling me I have to do one thing, another arm telling me I have to do requirements of different specification. We need consistency, and that consistency throughout all the stakeholders is what makes us effective, because if we're hearing 10

different messages from 10 different places, it's very difficult for us to actually work across all of them. Then we end up choosing one avenue that we can apply. And if that avenue is not consistent with the goals of the other avenues, you know, we're the bad guy when we're doing everything we can to protect our workers and to protect our businesses and to protect our environment.

And so one thing I would ask is whatever you come out with, because the EPA really doesn't touch me as an ag retailer. Whatever you come up with, make sure it's implementable in the field and it's effective when it's implemented, and we don't have to pick and choose what aspects we can implement and what aspects we can't.

MR. KEIGWIN: Andy?

MR. WHITTINGTON: Yeah, I would, given the scope and the breadth of the questions you're seeking answers to, I think I would support Tim's suggestion that there is a workgroup that contains several different stakeholders in there to provide you the input. I don't think you're going to get today what you necessarily need. We would be happy to submit comments to you on the questions.

MR. KEIGWIN: Amy Liebman.

MS. LIEBMAN: In response to the working group, I'm pretty mixed about that. I don't have a lot of confidence, sorry, I'm -- Iris and I are the only like farm worker representatives in the group, that it would be a diverse enough group to really sort of look at the end user for the product.

And so if we did a working group, I think a lot of thought has to be into how it would be run, who would be involved. You know, there's a -- we can't just have sort of the same old-same old or I don't think it will be very effective.

MR. KEIGWIN: So, thanks, Amy, for that. To your point, if we were to establish a workgroup, and if I go astray, I'll have Shannon correct me, but as a workgroup, we can have -- while we have to have some participants from the PPDC on the workgroup, we can also have additional people who are not members of the PPDC so that we can bring in those additional perspectives and backgrounds and contributions.

So if we did form a workgroup, I think that would be one of the requests that we would make of all of you is who are the right people and right entities to have as part of the workgroup.

Their work, as we'll have after the break with the Public Health Workgroup, their work would

then have to come back to this group for consideration for a recommendation back to the Agency, but my point was really that through a workgroup exercise, if that's what we wanted to recommend back to the Agency, we could have expanded participation in part to address that specific point, Amy, that you were making.

Donny?

MR. TAYLOR: So the other thing in worker protection standards, the backbone of this is the safety data sheets, and it seems like each Agency just has their own version for the same task or for the same behavior. So if there could be some type of uniformity so that when we do those trainings that it is in compliance with multiple agencies and not just one. Probably the difference between EPA and OSHA is probably the biggest gap that I see out there today.

MS. SANSON: As long as you're talking about safety data sheets, you know, like safety data sheets are a little bit more readily available in other languages, but that is pretty key, that they are always provided in the language the workers speak.

MR. KEIGWIN: Let's just check, we gave Iris an opportunity directly, but maybe just to open up the line again to see if Richard, Andrew or Iris have

additional questions.

MR. THOSTENSON: I don't have any additional questions on this. This is Andrew.

MR. GRAGG: I don't have any additional comments.

MR. KEIGWIN: Thanks, Richard.

MS. FIGUEROA: I would just welcome, you mentioned, Rick, if there was to be a workgroup, the possibility of having participation from member -- from people outside of the PPDC.

MR. KEIGWIN: Right. Okay, thank you.

So let me ask, is there consensus that we should try to go about forming a workgroup to dive deeper into this, noting I heard from a couple of people that there would be an interest, and, frankly, more of a need to expand who would participate in such a workgroup. Are people -- is there a consensus around that?

MS. ASMUS: I would encourage that. We meet twice a year, and give our input when we can outside of that, but a workgroup really sets a goal and has directed conversation around it, and I think it makes this group more effective if we can have somebody look deeper at it and bring it back to that group. So, and as a retailer, I would be on that group if it was so

determined.

MR. KEIGWIN: All right. Amy?

MS. LIEBMAN: I would support it. I mean, again, I made my point about the diversity, but also, I think it's going to be work on the Agency. I would ask that you have interpretation available. I would ask that you have funding available to support the time and effort from stakeholders that can't afford to spend their time, you know, doing this.

If we really want to engage the community, a workgroup like this will take more effort than we normally do, and I -- I would agree to it if we can agree to some, you know, to make sure that it's diverse and make sure that we're inclusive and that we don't have barriers that prevent people from participating.

MR. KEIGWIN: Nina?

MS. WILSON: I would support the workgroup and I would like to say that I think the biological products industry would like to be part of it so that we can talk about the benefits of our particular kind of products for worker safety as well.

MR. KEIGWIN: So I would -- I appreciate that. I would caution us that I think the charge of the workgroup would be to focus on how to measure the

effectiveness of how we're out using those funds to promote worker safety and the programs specifically that we're funding with those dollars.

So I think we would have to come up with a --

MS. LIEBMAN: Yeah, I think it would depend on the metric that you picked, right?

MR. KEIGWIN: Well, the metric. The charge specifically in PRIA 4, as I understand it, is in the expenditure of those setaside dollars to fund the development of worker safety materials. How effective are those materials? So I want to look at Steve and make sure I've got that right.

MR. SCHAIBLE: So, yeah. Basically the reporting is saying the appropriateness and the effectiveness of how the money is being spent as well as -- so EPA's evaluation of that, the stakeholders' evaluation of that within the worker protection activity realm specifically, and then finally the third reporting requirement is the description of how stakeholders are engaged in the decision to fund such activities, grants and the programs. So those are the three elements that EPA will be reporting on as part of the annual report and I think we're interested in getting feedback on those specific points.

MR. KEIGWIN: So with that caveat, I think

--

MS. LIEBMAN: I could draft something up for you to look at and consider as part of it, because I think it is part of understanding and making sure people understand what the benefits of certain lower risk products are, and I think that is part of worker protection.

MR. KEIGWIN: I mean, if you want to submit something, we can certainly consider it. I'm just looking at the plain language of the statutory provision and the statutory provision talks about the money that we spend. So, for example, a cooperative agreement to entity X, how effective is the materials that they are developing in achieving worker protection, as opposed to what is the safety profile of any individual set of products.

So I think we have to -- it would be a challenge, I think, to incorporate both of those things when I think the intent of the language was to really get at how efficacious are the materials, the training, the videos, the outreach, and achieving the aims of spending the money in those areas.

So I'm not ruling it out, I'm just saying the primary focus would need to be (inaudible).

MR. KEIGWIN: Okay. So is anyone on the

committee opposed to the recommendation that a workgroup be formed in this regard?

(No response.)

MR. KEIGWIN: Understanding we would have to do a little bit more work on -- if the Agency did decide to accept this recommendation, we would need to do some additional work as a committee to refine and develop a targeted scope so that those participants on the workgroup would have a clearer understanding of what we were asking them to do.

MS. LIEBMAN: That would be super critical and, you know, right up front, that objective has to be, you know, agreed upon or it won't be an effective workgroup.

MR. TUCKER: Do you feel like you have a subject matter expert here at EPA for this category?

MR. KEIGWIN: So we certainly have people that are experts in the materials that have been developed, experts in the direction that we have given to our cooperators in the development of the materials. I am sure that there are people in EPA, to get to one of Amy Liebman's earlier points about measuring effectiveness, I think we can also reach out to NIOSH to see what type of work they've been doing. Amy referenced the work that they've been funding in

Florida to see what types of metrics and approaches they've been using to help that could then also help to inform any direction we give to this workgroup.

And I suspect that in the course of the workgroup's activities, particularly because we would be able to bring in individuals that aren't sitting around the table today, that we could look for individuals who have specific expertise in measuring effectiveness of programs generally that could help to move the workgroup's discussions.

All right. So what we will take back to the Agency is a recommendation to form a workgroup to help better inform how we will address this reporting requirement under PRIA 4. If that recommendation is accepted, we will then come back to this group with a more focused charge in the workgroup so then we could then begin to get the workgroup's activities up and running. Hopefully prior to the next meeting of the PPDC.

Does that reflect the consensus of the group around the table?

(No response.)

MR. KEIGWIN: Okay. Thank you all for that. We are right on time. So it is 10 -- basically 10:30. We will start back up at 10:45 with a report from the

Public Health Workgroup. Thanks.

(Brief recess.)

MR. KEIGWIN: Welcome back. So for our second session, we have a report out from the Public Health Workgroup, so let me turn things over to Wynne Miller and Susan Jennings.

MS. MILLER: Hello, everyone. So the public health -- this particular workgroup has been working on suggestions for the full PPDC on things that could help EPA when it comes to responding more effectively to a merger season. I guess this stemmed out of meetings before my time coming on board last November. So but the last six months or so, they've been working really hard trying to pull those recommendations together.

There's about probably 20 people on this workgroup. We've had some very great discussions, probably about six or eight meetings. I've probably lost count, Susan, but -- so what they're going to do is present their suggestions to you and then discuss those suggestions. I guess it's up to you whether or not you want to put forth those suggestions to EPA -- those recommendations to EPA. You know, whether or not you want to have time to look at the materials later on and then come back and provide those

recommendations to EPA, but what I would do right now is I'll let David Jones, who is our spokesperson, present the suggestions to you and we will begin those discussions.

After we've finished with that particular session, one of the things that we do want to start discussing as well is what is the next thing that the Public Health Workgroup should be looking at? You know, are there suggestions out there that after this particular one is done, things that people think we should be working on next. And so we will talk about that maybe the last 20 minutes of the hour. Okay.

MR. JONES: All right. Take two. Good morning, everyone. This has been an interesting workgroup. Like most others I've worked in, I think I learned more than what I contributed, so, you know, it's been a great experience. I hope you find our output of value. So, you know, without further ado, we'll jump in and discuss what we are going to suggest to the PPDC.

First, let's start with the foundational definitions and assumptions that we defined to help focus our efforts. The workgroup goal we had decided would be to develop suggestions for the PPDC to help the Office of Pesticide Programs respond more

effectively during an emergency, as Wynne he had shared.

It would also be considering other agencies' involvement, and the harmonization of communication materials about pesticides. So, again, like the prior discussion, you know, talking about communication pieces.

We defined an emergency for the context of this workgroup to be any unplanned event or series of events that cause an ongoing tangible threat to human health that can be ameliorated by the proper and appropriate application of EPA registered pesticides. Such an emergency event could occur when: One, a new or reoccurring pathogen is introduced; for example Zika.

Two, conditions following a natural disaster lead to the sudden increase of a public health threat; for instance, you know, fly increase, mosquitoes, rodents, vector-borne viral challenges, bacterial or fungal pathogens following a hurricane. You know, could be during flooding. These are just examples of many of the events that might trigger EPA's involvement supporting other agencies.

And lastly, third, human events or terrorist activity warranting a coordinated communication of the

proper and appropriate use of pesticides; for example, it's been a while, but the anthrax threat that had arisen.

Not covered by this definition would be events that can be readily planned for. For instance, you know, seasonal flu. It's going to happen, we know it, we know how to deal with it, more often than not. And also peak vector activity periods. Summer in Minnesota is one memory that comes to mind, the mosquitos carry you off.

So OPP's role in an emergency. OPP is not expected to be the lead responder in an emergency. You know, we were pondering the whole group, you know, when might that occur and, frankly, we couldn't come up with one, so we concluded our efforts would be towards EPA's response as a support role.

EPA serves as a vital role when pesticides are needed, whether alone or as part of an integrated pest management IPM program, to respond to an emergency, providing information on registered pesticides to control microbial, vertebrate and invertebrate threats to public health.

So those were the basic parameters that we started our work. At that point, to become or to handle it more efficiently, we had divided ourselves

into four workgroups. One was EPA's roles and responsibilities; another group tackled stakeholder involvement issues; a third were pesticides, IPM and other control tools; and lastly, we had a workgroup that dealt with communications. So I'll jump now into what each of those groups did and are suggesting as a result.

Response area number one, EPA roles and responsibilities. Many key stakeholders and members of the public are unaware or ill-informed of the roles and responsibilities of the EPA during public health emergencies. This may result in confusion, misinformation and the potential misuse of pesticides, which may lead to an ineffective response and failure to mitigate the emergency. My dad taught me long ago, you've got a job, you have to have the right tool.

So suggestions to PPDC in this regard were that OPP, as a supporting role to other federal, state or tribal agencies -- and when I mention this, it's not to, you know, slight any Agency by not mentioning them here, but there are so many that EPA may work with, please presume that I'm talking about counties, parishes, you name it. There could be interactions that EPA would go beyond the list that I'll mention, but they'll clarify in detail how OPP's role might

vary by crisis type, how EPA's communication roles throughout the public health emergency would continue, be maintained and/or ceased, for instance. OPP's role relative to other EPA programs, federal agencies, and stakeholders, again, we're confining the focus of this group to OPP's role.

OPP's role in identifying and preparing for emergency public health issues. So everything is pretty much in place, hopefully, or at least a template on how to respond to each different varied emergency as it arises.

And lastly, a description of OPP's roles and responsibilities in after action reviews for response. So what lessons can be learned when the clock is off and they've got time to reflect.

Response area number two is stakeholder involvement. This group considered during an emergency, OPP responds to queries from various entities. For instance, it could be CDC, it could be DHS, it could be state pesticide regulators, health departments, the media, et cetera. When OPP reaches out or engages stakeholders directly, stakeholders involved will vary based on the extent and type of emergency. Again, just forming a game plan, if you will, for whatever occurs and whoever might be

involved in responding.

Here is the suggestion of the stakeholder involvement group. OPP stakeholder outreach. We recognized and are suggesting using email lists currently used for OPP updates, et cetera. Those are mechanisms already in place that distribute pertinent information at regular meetings with groups, and that would be groups such as this, it could be PRIA stakeholder meetings. It would be, you know, normal channels of communication already in place.

And I neglected to mention, too, there are more detail around these issues in the handouts that just came to you, so, you know, we can certainly discuss after, but I'm just hitting a high level on all these items.

And lastly for the stakeholder outreach, use PPDC's semi-annual meetings to communicate when appropriate. Now, the stakeholders include but are not limited to federal, state, territory and tribal agencies; local government health and pesticide officials; end user and specialty groups; professional trade associations; pesticide program dialogue committee; and I'm sure there are several others that would be considered should this action go forward.

Response area number three, pesticides, IPM

and other control tools. OPP has a mandate to educate and encourage the proper use of pesticides and the corresponding use of IPM, including non-pesticide control. Maximum efficiency of pesticides is especially critical during an emergency. OPP can be better prepared for emergencies by preparing policies and materials in advance of an emergency. Again, it's having a game plan, the materials done, prepared ahead of time, as we can, you know, foreseeably expect.

The suggestion for that area was adapt existing materials on processes to specifically address public health pesticides. In particular, the group had discussed clearly defining the differences between an experimental use permit and Section 18 exemption, so that one could decide which path to follow should there not be an existing pesticide, how can it be more easily or promptly readied to respond. So understanding those differences would be key.

Also, the recommendation -- the suggestion was modifying Section 18, Roadmap, to specifically address public health pesticides not necessarily currently in scope.

Also suggested was discussing roles and options for using pesticides that are not registered, including novel delivery options for pesticides. I

think one of those will come up later when the drone discussion occurs.

Also clarify OPP's policy to expedite pesticide reviews during emergency. Again, it's more if there's nothing out there to counter the threat, then how can that be approved more quickly and assessed properly, of course. And lastly, create IPM materials specific to types of emergencies and pests.

Response area number four was communications. This group had discussed during an emergency, accurate pesticide information is needed quickly. Consistent pesticide messaging is critical to community leaders who provide information to their specific audiences.

This was an interesting group I had worked in, but there are so many instances, there are so many levels of communication. You know, you have to target, you have to make sure it's effective. You know, as we go through, I think you'll see just some of the nuances. So it is a big job dealing with these emergencies as they arise.

So the suggestion was the existing communication methods should be consistent. Being proactive allows OPP to respond quickly and effectively. It frees Agency resources. It's always best to contemplate strategies and communications when

adrenaline is not flowing as high as it could be during.

Plain language information about risk and benefits of pesticides used to control pests and pathogens during public health emergencies. And here, a simplified special message for vector control products applied by ultra low volume, or ULV, was offered as one example.

Within the detailed documents, you'll see a link to Federal Government's guidance on how to create plain language information and communications. So, you know, the tools are there, it's just taking the time to plan and prepare.

And then the last bullet, create standard statements on pesticide issues for emergencies. Also, you know, when the adrenaline is not flowing, you get ample time to consider issues like endangered species, risk to the environment, if any organic farms issues come up, NPD gas permits, environmental impact assessments, pollinators, parklands. I could go on, and the detailed document does somewhat, but, you know, there are a lot of issues to cover. And doing it when, you know, time to think and react before the adrenaline hits is going to be the best time to do that, we thought.

So that went quicker than I had done it earlier today, but anyway, as we're getting close to lunch, that's probably a good thing, right? So I'm going to turn it back over to Wynne, and thank you for your time and attention.

MS. MILLER: Thanks, David. And one person I forgot to mention was Susan Jennings here, who has been very helpful, she works for EPA in the Office of Pesticide Programs and she has been super helpful in leading this group and helping them, you know, have meetings and comments on the documents and help clarify things related to EPA's role under certain circumstances.

So if you have questions for some of the suggestions that the group has put forward, then why don't we go ahead and start.

Dan?

MR. KUNKEL: Thanks, Wynne. And great work by the team. Just after hearing the different areas of work and I was just wondering if there's any area of doing trial runs. You know, we always hear about that for some of the other emergency responses and I'm just wondering if the working group discussed any test runs, trial runs, to kind of test out the some of the recommendations that you've provided?

MS. MILLER: We didn't necessarily run explicit test runs, but we did talk about a lot of different scenarios. The workgroup was comprised of members from different parts of the industry, the antimicrobials, the mosquito concerns, tick concerns. So we tried to make it fairly diverse. So when we talked about particular suggestions, those views were taken into account and we kind of ran through it.

I think one of the things that the more we discussed in the workgroup, we learned was that it's really -- this isn't so much an emergency response suggestion as it is an emergency preparedness suggestion. Because the response is going to be a whole lot more holistic, thought out and rapid if we can pull out and tease out the things that we can prepare for in advance. Does that address the question? All right.

Any other questions? I think is your card up, Amy?

MS. LIEBMAN: So are these just clarifying questions or we can ask any questions now?

MS. MILLER: Go ahead.

MS. LIEBMAN: Well, first of all, thank you for all the work that you've put into this. I know that the workgroups take a ton of time. And I am just

curious in terms of I like this idea of the whole emergency preparedness piece of it. That makes a lot of sense. But I'm wondering what considerations you have for helping to make sure that the information reaches vulnerable populations and populations that might be more at risk?

So what are we doing in terms of different languages, different approaches to reach the farm worker community or other sort of isolated communities, and how is that going to be incorporated into the preparedness of the EPA?

MS. MILLER: So, Amy, is that something you're thinking that should be part of the suggestions/recommendations back to EPA, then? Because this workgroup is developing suggestions for us, right? Are you thinking that should be part of the materials in the recommendations, in targeting those vulnerable populations when we do have messages that maybe go out?

MS. LIEBMAN: Right. And incorporating standards like distrust of government and incorporating all these little nuances that are really critical in terms of reaching populations.

MS. MILLER: Yeah, I think one of the things -- we did discuss that actually, at different points

fairly extensively, and if you look at the handout that was handed out earlier, it gives more detail. I think what Dave's slides and what he presented is just an overview, but that was an integral part of our -- the communications section at the end. And I think that it was very much something that we discussed and something that we addressed as a problem.

I think there was also a lot of discussion as to how it fits into EPA -- OPP's role and how we can make that part of what we're doing and how not only make our communications more targeted, but also communicate with the people in the communities and in the states that understand and recognize their own vulnerable populations.

As a national organization, sometimes we just can't do it all, but there are things that we can do to make it easier for other people to do it, and that was part of the discussion as well.

MR. KEIGWIN: Laurie Ann?

MS. BURD: Thanks. So not to diminish the importance of emergency preparedness, but the United Nations says that 200,000 people die each year from acute toxic pesticide poisoning, so there is an ongoing public health emergency related to pesticides that can't necessarily be solved by more pesticides.

I'm wondering if the workgroup would consider expanding its scope to look at acute pesticide poisonings and also chronic pesticide poisoning, and if not, what OPP is thinking about this issue and ongoing crisis?

MS. MILLER: So, Laurie Ann, one of the things that we're going to talk about after this particular discussion was what other topics should the workgroup take up. So maybe that's something to consider, you know, for the future. Whether or not that's one of the ones they want to tackle. So maybe just we could add that to the list.

Go ahead, Rick.

MR. KEIGWIN: Yeah. Just to refine that, so we had given -- this group had given the workgroup a specific charge, so they're reporting on that. I think what they're going to want from us at the end is which of their suggestions, what subset, or all of them, do we as a group want to recommend forward, but then their next ask is so what else do you want us to work on? What should be our next charge?

So I think that would be one that we would want this broader group to consider as the next charge for this group.

MR. JONES: And also having been involved

with communication team on this project, you know, that was part of our hope was that EPA through this exercise would be viewed as the expert, would recommend what was appropriate for that particular threat, if you will, and use the right tool properly as a result following their expert guidance.

MR. KEIGWIN: Any other comments, questions for the workgroup? Tim?

MR. TUCKER: Maybe I can look at you in the right direction and talk into the mic'. I think that you have done some great work here, and thanks to the committee -- the workgroup, I mean, but on the last page, you had build the public's confidence toward the EPA's approach by improving communique quality, quantity and consistency. And I think if I could see one thing in your presentation that really popped out at me, it's this aspect of communication and changing the public's confidence.

Were there any suggestions from the workgroup that you could do to accomplish that? Because there are a lot of, you know, concerns that people have. The EPA's image isn't always the best with a lot of the country out there. So were there any suggestions?

MS. MILLER: We did discuss that, and there

were no concrete suggestions that came out of the workgroup, but I do think there was a lot of discussion about inconsistent messaging, messaging that takes too long to get out.

And the fact that -- and that's one of the backbone pieces of this effort is to get that information out more quickly, because in that space between when we get the ask and we issue whatever it is, you know, the response, misinformation steps into the void. It makes it a whole lot harder to respond to that misinformation and then try to get our message out than if we had our message out from the very beginning.

And so I think that some of those things, I think the workgroup was planning that this would help that situation. And also we discussed somewhat the inconsistent messaging across the federal agencies, and that's another thing that we're going to be working on.

MR. TUCKER: Yeah, but I think the one thing I was trying to point out was the public's confidence in that message, and I think that's really what is key in that point.

MR. KEIGWIN: Sharon?

MS. SELVAGGIO: Hi. Thank you for this

presentation. I have a couple of comments. One on the communications page about standard statements. I think these are important, but, you know, from reading labels, for instance, there's a lot of standard statements on labels, and while these do promote consistent messaging, understanding, and, you know, kind of a general understanding that can extend over time, sometimes standardized statements also kind of lull people into a sense of complacency. Like they're not telling me anything new here, you know? There's nothing specific about this particular emergency or response to it that I need to pay attention to.

And so I think that it will be important not to use any standard statements that get developed to substitute for any specific measures that need to be taken into account, because as is stated somewhere in here, every emergency is a little bit different. And so to ensure that the other resources that are of concern during any particular emergency is taken into account in a site-specific and time-specific way, I think it's just going to be important to pay attention to the specifics of the situation and not use standard statements to sort of cover all your bases.

One other comment I have about the Section 18 process, and just to build on what Amy was talking

about earlier in terms of the discussion we had about evaluation. The Section 18 process is, you know, designed, if I understand it correctly, for emergencies. Correct? So this allows EPA to allow a higher label rate, perhaps, or a use on a crop or in an area that might not be on the original label.

And I'm curious about the process that's used to both approve Section 18, and I want to ask the Public Health Workgroup about considering an evaluation process on Section 18 exemptions that would take into account evaluation of other resources that whether it be public health, environmental health, et cetera, so that we know that the Section 18 process is working in a way to address the emergency without compromising those other resources and values.

MR. KEIGWIN: Liza?

MS. TROSSBACH: I think I agree with the previous speakers. I think this is a great document, I think it's a great effort. I like the proactive approach, you know, preparedness versus response. For the communication area, I think messaging is very important. There's a lot of good information out there, a lot of not good information, and sometimes you can get that confused.

I would just offer that for the

communication, really one of the suggestions may be identifying different ways to communicate. We have so much, you know, social media now, Facebook and Twitter, and I know EPA has a Twitter account, which I follow, by the way, but, you know, but the social media, and I'm certainly not well versed enough to say all those different avenues, but I think what's become clear is that it needs to be quick, concise, it needs to catch your attention, it needs to be immediate.

From time as a government official, I'm very well aware of how some things take time, and unfortunately, sometimes we don't always have a lot of time. So a way to expedite those processes and messages getting out, and that would be within EPA, across other federal agencies, I think just some effort in that area.

And then also the states and the folks at this table. You know, part of that having confidence in government comes from within the Agency, but also from your partners, your stakeholder groups, and having them have confidence as well and sharing that. And I think part of that is the type of message, how quickly it gets out, that we're all on the same page, and I think that using some of the social media and some of the new technologies and unique ways to do it.

You know, whether it's an app on your phone or a video clip or a testimony or whatever it is that Sharon was saying to catch that person and not have them hearing the same thing over and over. So somewhere some comments about how to approach that.

MS. MILLER: Thanks, Liza.

Anyone else have comments?

(No response.)

MS. MILLER: Should we go to the phones?

MR. KEIGWIN: So, Richard or Andrew or Iris?

MR. GRAGG: Richard has -- I do have some comments. I want to start with saying it was an excellent report, but I have two areas. One is that -- I'm in north Florida, in the panhandle, and we've had several storms and events here, and one of the impacts is that a lot of the rural jurisdictions, municipalities and counties, both, really weren't prepared for anything, and I think it was due to the lack of resources.

So I think that's something I'd like to see the report addressed or recommend that needs to be addressed. Because the communications is great, but if you don't have the resources to do the preparedness, then those two don't add up.

The other point is that I would like to suggest that the report or the next steps are also called for preparedness that accounts for different types of impacts of these emergency and disaster. I'm talking about natural disaster events.

So, for example, in the Carolinas -- I think it was Kentucky. So in the Carolinas, we had all the flooding, so that's just an example. So it's not only preparedness, but it's preparedness for the specific types of events and impacts.

MS. MILLER: So this is Wynne. One thing I did want to kind of point out a little bit that we talked about early on, Andrew, was that one of the things that these guys were tasked with was coming up with suggestions on how we could do a better job in regards to when it comes to pesticide related, you know, emergency. Whenever OPP is involved and pesticides are involved.

So I guess my question back to you, when you talked about lack of resources, I mean, you know, there's a lack of resources when it comes to the local, state, and at the federal level, and I guess my question is, were you making that comment in regard to pesticide related things or was that just a globally overall lack of resources?

MR. GRAGG: Well, it's global, but it impacts the preparedness for response, for emergencies. And it could be a specific pesticide event, but it can be a pesticide event that's triggered through a natural disaster. And so I guess we're talking global resources.

So it's just the reality that we can have communications -- in the report, in the comments was that the report was more about preparedness and helping to foster preparedness, and I just think the -- from the reality point of view, that we have to consider that these -- certain of these jurisdictions do not have the resources to really attend to these type of things.

MS. MILLER: Okay. Thanks, Andrew.

MR. GRAGG: It's Richard. Richard Gragg.

MS. MILLER: Richard.

MR. KEIGWIN: So I see Aaron, then Sharon, then Amy.

MR. HOBBS: Great. Just in recognizing the workgroup, opening that up to a broad group of stakeholders and for facilitating a lot of thoughtful discussion about this issue. I think we have participated in this process and are happy with the document that's before us, and I also think it was

helpful to further educate members of the PPDC and other participants about what the Agency's role is and is not in an emergency response.

Just as a member of the PPDC, I want to recognize that it is mentioned here and it's been mentioned several times this morning, when we're talking about a public health emergency, such as a hurricane response, I just want to recognize, it's not -- the EPA is not the lead in responding to that. And I think that -- I'm afraid that continues to be missed that when we were doing Zika, for example, EPA has a role, and but when we look at the resources that are available and committed to that response by the Government, EPA is probably not the -- is not the biggest player in the room there.

So I think this is important, I think there has been good dialogue, I think being better prepared for our role in emergency response is appropriate, and I think maybe we could still do some more education about things that the Agency is a part of and things that are outside of its purview, even if you wanted to do it. But thank you.

MS. MILLER: Thanks, Aaron. Yeah, that came up a lot, you know, EPA's role. And again, we couldn't think of an example where we were the major

player when it came to the lead role, but yes, we do support a lot of other agencies and that's one thing that we thought we could try to figure out that this group was suggesting should be clarified as what kind of support role do we play in different events.

MR. KEIGWIN: Okay, Sharon and then Amy.

MS. SELVAGGIO: This might go to the role question a bit, but one kind of emergency that's not listed on page 1, and I'm wondering if it should be within the scope of this workgroup, is basically the unplanned release of pesticides from either plants -- I know that there's a ton of information and labels and in pesticide safety stuff about bills that occurred during use, but when we think about some of these public health emergencies that we've just been talking about, such as hurricanes and in the news about -- you know, just a few days ago there was an explosion of a chemical plant in Illinois, that basically prevented -- I don't think this was actually a pesticide plant, but, you know, there's a concern when something like that happens that people are going to inhale contaminants. During the flooding that occurred as part of the hurricanes, people were exposed to a variety of different contaminants in the flooding.

And so I'm thinking about basically that the point sources that are really important to make sure, and maybe this is an OSHA responsibility more than an EPA responsibility, I'm not sure, but for any pesticide source plants and manufacturing plants, I think, you know, it might be helpful to think about those as well, because we know what the risks are of basically unplanned releases of pesticides and the explosion risks and all of that.

So I guess my suggestion is that that be possibly considered by this workgroup as well.

MS. MILLER: Yeah, we actually discussed that to some length and it does touch into the role and the responsibility of -- it's really OPP, not EPA. So EPA most definitely has a role and maybe even the lead role in some of the events that you're describing, but the Office of Pesticide Programs does not lead those, they would be led by the Office of Water, the Office of Solid Waste, the Office of Emergency Response. You know, any of those types of places, but OPP would then advise and provide and respond. Provide support.

MR. KEIGWIN: Okay, Amy and then Laurie Ann.

MS. LIEBMAN: First of all, I would like to commend this group because I think they've done a great job. One of the things that I'm maybe not

picking up or what's missing here is how live of a document is this? Because you really should have a section on followup. Do you have something for critical incident debriefing or evaluation? Talking about the successes and the difficulties that you had during that event and you feed that back into the preparedness for the next similar event so that you have this ongoing live document that actually is adopted as we learn from unfortunate events?

MR. JONES: Sorry, I don't have the document in front of me, but that was discussed and it's in the detailed document. Afterwards, we had recognized a lot of federal agencies will go through and do a post event review or a term similar to that. You know, because you've got to learn from any mistakes or look for those opportunities to improve. So, you know, we did recommend that that be -- or suggest that that be part of the process. But yeah, valid point, we agree.

MR. KEIGWIN: Laurie Ann?

MS. BURD: I just wanted to raise my concern about the definition of "emergency" here and recommend that the group consider changing that. While I recognize that what you are working on right now is this disaster preparedness element of an emergency, it

really narrowly defines emergency. So a situation where pesticides ameliorate the emergency, and as I mentioned, and as Sharon mentioned, there are also incidences of emergencies where pesticides are the issue. So I would hate for the workgroup to overlook those for no good reason.

I don't believe emergency is defined that way in any other context, is there? Or is there any other?

MR. KEIGWIN: So I think the charge to the workgroup, just to be responsive, had to deal with natural disasters and what OPP's contribution to that would be, but I think what I'm hearing you say is an area for maybe the next charge to the workgroup, perhaps?

MS. BURD: Or just describe that in the charge, not in the definition of an emergency.

MR. KEIGWIN: Yeah. Thank you for that.

All right, any other comments on the workgroup's product from this morning?

(No response.)

MR. KEIGWIN: So it's a very robust set of suggestions. What they are at this point is suggestions, so what we would need from you all is a recommendation to bring these back to the Agency for

further consideration, and so I'd like us to have some discussion about that. And within that, the extent to which if there are in these four response areas a relative priority we were to focus -- if we were to take this back as a recommendation.

So let me just see if there's any feedback on that question to you all. Or is it all of it? And that's fine, too.

Do you all want time to think about it and we can come back to this? Because everything I heard was very positive about the workgroup's efforts, so I just want to make sure that if what we want to do is adopt their suggestion as a recommendation, we can move forward. Maybe, Damon, you might help us with this.

MR. REABE: You might -- you're probably going to help me out a little bit. Just because it's a procedural thing, I might not fully understand. In order to formalize the work that the workgroup has done, the PPDC would need to be -- and so I would fully support the work that the workgroup has done and ask that it become formally suggested.

UNIDENTIFIED SPEAKER: Second.

MR. KEIGWIN: Anyone opposed to bringing this forward as a recommendation in all four response areas?

(No response.)

MR. KEIGWIN: Okay. We will bring this back as a recommendation.

I think we have about 10 minutes left in this session, so I think with this report back from the workgroup, they have fulfilled the charge that we had given them, but the second piece that the workgroup wanted to spend some time on today, and we had some suggestions as part of this discussion, is what would be the next charge that we would give to the workgroup. And as part of that, we would probably look for a partial refresh of the workgroup, depending upon the topic given, bring in people with those areas of expertise or interest.

So let me open it up -- I don't know, did the workgroup have some suggestions on additional areas, or how did you all want to proceed?

MS. MILLER: We did have a suggestion for the hospital disinfectants and a couple of issues that they were interested in addressing on that. That's really -- we didn't spend a whole lot of time discussing this. I'm sure that there will be members of the workgroup that will have other suggestions as well, but we would really welcome input from everybody on the full PPDC, too.

And then there was the earlier suggestion from Laurie Ann when it came to acute poisoning, pesticide poisoning. So I guess the question is, are there other things that people are thinking of that you might want a workgroup to -- a Public Health Workgroup to tackle? Because again, whatever we decide to tackle, then that might drive who's going to want to participate on the next Public Health Workgroup.

So are there other suggestions for things related to public health?

Damon?

MR. REABE: I don't know if this fits into the scope, but would it be appropriate for the EPA to look into the impacts of public health when a pesticide application is not made? It would seem like that would tie in really nicely with consistent messaging and a better understanding of the public of what's being done and why it's being done. Does that -- I don't know, that's just a random thought.

MR. KEIGWIN: Liza and then Amy.

MS. TROSSBACH: To follow up on Damon's comment, I was going to suggest not only with the previous recommendation that went forward, but should we go -- should the group go to the acute and chronic

pesticide exposures in dealing with the public health perspective. I do think there needs to be a discussion about the benefits and risk of pesticides. Certainly, you know, there are risks to pesticides, but there are also benefits to their judicious use, and I think that needs to be kind of put at the forefront of any discussion.

Integrated pest management is important, how you can do things but sometimes that use is needed and then the legal use of that and all those protection and public health, you can be in a health environment, so I think that would be a key message. I think sometimes we don't really talk about the benefits because it's pesticides and, of course, there are a lot of risk concerns, but it's part of the use of those products and why they're legal for use and I would just suggest that that be part of that as well.

MS. MILLER: Thank you, Liza. I think that that also is an issue that the current workgroup did address, and that we are planning. It is on the -- if you look in your thing, there is a discussion of risks and benefits and what happens as far as if you don't use anything, if it's being done for disease control or if it's being done for other sorts of medication.

So that is actually an output, but it's good

to hear from you, because that kind of tells us a little bit about priorities and everyone's interests, but this is another option -- another thing on our current workgroup.

MR. KEIGWIN: Okay. Amy?

MS. LIEBMAN: So I've talked about this -- no, they won't.

MR. KEIGWIN: Yeah, but can you (inaudible.)

MS. LIEBMAN: Okay. Let's try this. And in terms of even the name of this group, the Public Health Workgroup, and, you know, it looks like what your scope has been to really look at OPP and what happened and what happens during an emergency where there is a flood and all of the sudden you have, you know, mosquitos that need to be controlled. But if we're looking for new work for the Public Health Workgroup, it would be great for it to be address other public health needs.

And one of the cornerstones for anyone that studies public health or knows public health, in this area, is surveillance. And understanding what happens when pesticides are on the market and used, whether it's going to be in the emergency situation or every sort of everyday use of pesticides. And we have a really haphazard system right now in terms of how

incidents are reported from the occupational aspect of it, we have the sensor program that is funded by I believe EPA and NIOSH, and that is where, you know, incidents are reported to State health departments or an appropriate lead Agency in order to understand what's happening and to go out and respond to those incidents.

And I believe that currently that only takes place in 12 states. It might be 13 -- 12 states. So if we really want to address the public health -- you know, begin addressing some of the public health concerns regarding pesticides use, surveillance is this cornerstone like the white elephant, we're not talking about it enough.

And we really need to. If we're going to register pesticides and put them on the market, we need to understand what happens to them once they are used and what happens -- in particular I'm concerned about the human beings that are exposed and having a much stronger, more robust instant reporting system in place. And then be able to respond. You know, the whole idea of the surveillance is to be able to respond to that.

So that's a huge need that, you know, the Agency needs continued sort of support to address

that.

MS. MILLER: Thanks, Amy. And I'm wondering does some of that maybe tie into what Laurie Ann was maybe bringing up a little bit, because wouldn't some of the discussion play into incidents and surveillance as well? I'm just trying to think, you know, tie some of the things together.

MS. LIEBMAN: I think it could, but really, this is something that all of us should be concerned about in terms of once they're put into use, what happens. And, you know, we talked about sort of looking at some of the effectiveness, but really, a surveillance -- a robust surveillance system that is not piecemeal, it's not only in 12 states, you know, ideally we would like a national system, but there needs to be more emphasis put on that. And that's public health.

MS. MILLER: Thanks.

Anything else? Laurie Ann?

MS. BURD: I just want to say, you know, I feel like that's a pretty separate thing from what I was mentioning. I think it's really important. I think it's a great suggestion, but it's an important other piece. You know, that also gets more of the chronic exposure. You know, what I was mentioning was

the 200,000 people who die each year, which is a pretty astounding number of acute poisoning incidents that are occurring, and this is a more robust monitoring system that you're describing for seeing what happens once they actually get out in the environment. So I want to support that and also say they're kind of not exactly the same thing.

I also want to mention another public health crisis, United Nations Global Assessment on the State of Biodiversity just found that one million species are heading toward extinction in the very short term. It names pesticides as a cause of extinction, and it gets pretty detailed about the impacts that that will have on humans, and one of those impacts is a threat to our food security. I won't go into all of the impacts. It's a pretty sobering report, if you haven't read it yet. I think that the public health working group would -- should look at that report and its findings and consider the impacts of the pesticides that it's registering on the extinction crisis as to how -- as it relates to public health.

MS. MILLER: Thanks, Laurie Ann.

MR. KEIGWIN: Charlotte?

MS. MILLER: Charlotte?

MS. SANSON: I just wanted to just make a

comment on the acute poisoning statistic that was given. While any acute poisoning due to pesticides exposure is tragic, I think when you look at that 200,000 number and see that that is a global estimate. In the U.S. we're very fortunate that acute pesticide poisoning is a very, very small percentage of that, and most of those are suicide.

So while I think it's an important factor to include in this Public Health Workgroup, I just don't see the need to blow it out of proportion and just take it for what it is. I think there's a good reason why in the U.S. we have very low percentage of that number because of the system that we have in place here. So I'm not discounting it, believe me, I think it's -- any pesticide poisoning and a death due to pesticide poisoning is tragic, but let's just keep it in context.

MS. MILLER: Thanks, Charlotte.

Amy?

MS. BURD: So I think, again, surveillance comes into this. I mean, deaths are -- whether you die or you don't die, and they're pretty -- they are strongly reported, but sometimes we don't know the cause of that. And so acute poisonings that do occur, one of the issues is underreporting, and that's what a

surveillance system would do. So when we talk -- when we talk about some of the impacts of pesticide exposure, there's just a lot that we don't know because of our weak surveillance system.

And again, from the occupational piece, there's like a tiny little piece in 12 states that's taking place, but that should be in every state so that we understand not just the deaths, but like if someone is acutely poisoned, and I think we just have this tip of the iceberg of a reporter happens to be standing near a field when workers get exposed. We don't -- if it happens to take place in California where there's more robust incident reporting mechanisms in place, those are some things that, again, would help us with some of the numbers in the U.S.

MS. MILLER: Okay, thanks, Amy.

Any other comments? Thoughts?

(No response.)

MS. MILLER: So we've got a little bit of a list here. I guess one thing that in the back of my mind is whether or not this group wants to, you know, come up with a list, have a recommendation for the next Public Health Workgroup, for you guys to decide, or if you want to wait until the fall, you know, till

that group comes in and so that they have a chance to, because I guess at some point we're going to have a new PPDC, whether or not you want them to have a chance to think about what the next Public Health Workgroup should tackle.

So I'm going to kind of leave it to you, how you want to do that, because that's your decision on what you want to put forth. You know, whether or not you have a list you want to generate for them, and they also can think about the list, or you want to decide on something now, or just in the next couple of months.

So let me ask that question. Thoughts?

MR. REABE: It would seem for the purposes of continuity to maintain the list of suggestions that's been made by this group, forward it to the new PPDC committee, right, and then have them finalize the list and begin that work on it. If I was a -- if I was on that workgroup, for instance, I would find that probably to be helpful.

MS. MILLER: Okay, thanks, Damon.

Anybody else?

(No response.)

MS. MILLER: Okay. Anyone on the phone, any more comments?

(No response.)

MS. MILLER: Okay, then that's what we'll have is that list ready for the next fall workgroup when they come in. And then they can decide what they want the Public Health Workgroup to tackle and the members of that group. Thank you very much.

MR. KEIGWIN: Okay. Lunch.

UNIDENTIFIED SPEAKER: If you don't mind, if I could just ask a question about that, because I'm a bit confused. Because you had said earlier that you -- I guess you had asked us does anyone oppose any of these recommendations and, of course, we had a lot of discussion and it sounded like this was going up as a recommendation. I guess I'm just wondering will the EPA take action on any of these over the next six months or will you wait for additional recommendations perhaps to come in for the next phase? I'm just confused.

MS. MILLER: Let me clarify, then. So for the suggestions for the emergency preparedness, those suggestions which you guys are recommending back to us that EPA look at those, we're going to take that forward, right? But the list we were asking for for the next Public Health Workgroup to tackle, what should they be looking at next. That list, I think

what we're saying right now is, hey, we'll give that list to the next full PPDC, and let them look at that list and decide, okay, we want the Public Health Workgroup to tackle this now. You know, since they're done with this other one. Does that make sense? Okay. Sorry if I confused people there.

MR. KEIGWIN: And perhaps a friendly amendment, last question for the committee, to help inform that selection is we could have -- we've heard what the topic areas could be, but perhaps we could have the workgroup kind of put a little bit more meat on the bone so to speak about what each of those suggestions were so that the new PPDC, however it's constituted, has kind of the benefit of some thinking going into a selection process at the next PPDC meeting.

Does that -- that way the Public Health Workgroup has something to be working on while, one, the Agency is considering the recommendation that you all have just made regarding an emergency preparedness, but then for the next PPDC meeting, there is an opportunity for a forward discussion around the topics. So maybe some additional topics that may come up through the workgroup's deliberations. Are people supportive of that

approach?

(No response.)

MS. MILLER: Sounds good. Thank you very much. And thanks to our public health 20 plus or so members of this Public Health Workgroup who helped with the suggestions that they put forth to you guys. They have been a dynamic group and we have really enjoyed working with them. So thank you very much.

MR. KEIGWIN: Thanks, everybody. We will reconvene at 1:00. Have a good lunch.

(A lunch recess was taken.)

AFTERNOON SESSION

MR. KEIGWIN: All right. I hope everybody had a good lunch. We will move on to Session 3, OPP Farm Bill Implementation and Hemp. Nobody is listening. It's like at home.

So with this, I'm going to turn this over to Ed Messina, who is going to chair this next session.

MR. MESSINA: Thank you, Rick. So this topic is of great interest to the Agency and the country. And every time we talk about it, I learn something new. EPA is new in this space, in hemp being legalized. And I've got some slides which we're going to present.

And while we're setting it up, I have a great panel of folks who agreed to come talk to us and provide us information. I'm going to do a run-through of basically what the Farm Bill allows just sort of as an overview and then have some charge questions for PPDC, and also if there's other questions or items you think we need to ask as part of this, I'll turn it over to the group. And I'm going to ask folks to identify themselves when I mention their names.

So from USDA, we have Dr. Patty Bennett, who is sitting next to me. Dr. Bennett is the current director of the Marketing Orders and Agreement

Division with the Agricultural Marketing Services within USDA, working on -- working with industry to provide stable markets for specialty crops.

And prior to that, she was the Food Safety and Inspection -- at the Food Safety and Inspection Service for 13 years. Dr. Bennett obtained her DVM from the University of Florida; holds a masters of science and biology from Old Dominion University, and a master's of public policy from George Washington University. And she's also a board-certified -- board-certified in veterinary and preventative medicine. So welcome and thank you for talking.

DR. BENNETT: Thank you.

MR. MESSINA: And then we have Liza Fleeson, who you all know from -- and she's representing the Association of American Pesticide Control Officials. She currently serves as the program manager for the Virginia Department of Agriculture, Consumer Services Office of Pesticide Services.

In this position, she directs the statewide pesticide program and administers the Virginia Pesticide Control Act and related regulations. She serves as the AAPCO representative to PPDC. She's the chair of the FIFRA Issues Research and Evaluation Group, which is SFIREG. And throughout her career,

Liza has worked in environment and public health programs with the Department of Health, Corrections and Agriculture. So that's Liza, who is going to give the state's perspective on this.

And then we have folks from the Kentucky Department of Agriculture and Mr. Michael Williams. And Michael is the director for the Division of Environmental Services at KDA's office, charged with the responsibility of pesticide product registrations in Kentucky. And I believe he's on the phone, Shannon, right?

MS. JEWELL: He will be.

MR. MESSINA: Will be on the phone. Okay.

MR. WILLIAMS: Yes, sir. We're on and can hear you.

MR. MESSINA: Great. Thank you. And we have University of Kentucky, Dr. Pierce. Dr. Pierce is a tobacco extension specialist and interim director (recording malfunction) program at the University of Kentucky, College of Agriculture, Food and Environment.

Dr. Pierce grew up on a small Kentucky farm helping to raise corn, soy beans, hay, and burley tobacco. He received his BS and MS degree in agronomy from the University of Kentucky, and a PhD in soil

chemistry from the University of Georgia. And during his 25 years as an extension specialist in Kentucky, he has worked on tobacco transplant production systems, soil fertility for burley tobacco, conservation tillage methods for burley tobacco and sucker control programs.

Recently, he has studied the application of tobacco style growing system to hemp production and screened potential herbicides that could be useful for hemp production.

And then we have from the commercial perspective on hemp and CBD production, we have Mr. Steve Bevan from GenCanna. Steve is the president of GenCanna, a company focused on scaling premium agricultural hemp production for food products. GenCanna is working with local farming partners and state universities to develop and deploy novel hemp propagation and cultivation techniques that increase efficiencies in yields. Steve is also chair of the U.S. Hemp Roundtable and treasurer of the U.S. Hemp Farming Alliance.

And the we have from Murray State University from the Academic Regional Economic and Agricultural Development perspective, Dr. Tony Brannon. Dr. Brannon serves as the dean of the Hutson School of

Agriculture at Murray State University in Kentucky. He's served on the faculty at MSU for 31 years. He's also been a leader in Kentucky agriculture serving two terms as the chairperson of the Kentucky Agricultural Council, both times leading and implementing a statewide task force that developed two successive strategic plans. And Dr. Brannen has got an extensive bio, which I will commit to further reading.

And then I think that's it, right, Shannon? Or do we have --

MS. JEWELL: Yep.

MR. MESSINA: That's it for this session? Yes. So a great group of folks are going to provide a perspective for the Agency on this new topic for where we've only recently been involved in. And with that, I'm just going to go over -- set up the discussion, sort of the three Farm Bills, sort of what's happened; talk a little bit about hemp. We'll go to questions for the PPDC to sort of contemplate.

So 2014 is sort of the beginning of some of this new process. The 2014 Farm Bill -- and I tend to call the Farm Bill the enacted Farm Bill. As an attorney, it ruins my School House Rock sensibilities to call it the Farm Bill because, you know, it's a law now. And the 2014 Farm Bill was -- allowed hemp if

the industrial hemp was cultivated for purposes of research, which included a number of topics under research. And it was allowed under state law. So you had growers applying for the 2014 ability to grow hemp.

We then moved on to the 2018 Farm Bill. And these are sort of direct quotes from the Farm Bill to give you a sense of how this progressed. So in one small pen stroke, minimal amount of words, hemp was removed from the Controlled Substances Act, making it legal for the production. Similar to the program in 2014, the Department of Agriculture controlling sort of the licensing and how those things would be grown.

And then hemp, important to understand that it -- and I'll just read the definition and then talk about, you know, it's not just a plant. Hemp means the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and the salts of isomers, whether growing or not, with the a delta-9-THC concentration of not more than .3 percent on a dry weight basis. So that is the legally compliant cannabis product called hemp.

So then if you want to grow hemp and you're a state or a tribe desiring to have primary regulatory

authority over the production of hemp in your state or territory, you submit an application to the Secretary of Agriculture -- through the State Department of Agriculture in concentration with the governor and the chief law enforcement of the state or the tribal government, and plan under which the State or Indian tribe is going to monitor the cultivation of growing of the hemp in their jurisdiction, so working with the Department of Commerce -- the Department of Agriculture.

And then in that, in the case of a State or Indian tribe for which the state or tribe plan is not approved under 29B, the production of hemp in that state or territory of that Indian tribe shall be subject to a plan established by the Secretary of Agriculture. So there's mechanisms for having the state submit and then having the Department of Agriculture (inaudible). And he'll be saying a couple things about that.

So there's certain violations that are attached for the plans. Failing to provide a legal description of the land on which the producer produces hemp; failing to obtain a license or other required authorization from the State Department of Agriculture of tribal government as applicable, and then producing

Cannabis sativa with a delta-9-THC concentration of more than .3 percent on a dry weight basis. So certain violations that attach that are written into the statute itself in the enacted Farm Bill.

And then interstate commerce, another provision of the Farm Bill I'll draw your attention to, which is -- nothing in this title or amendment made by this title prohibits the interstate commerce of hemp or the Agricultural Marketing Act of 1946, and then for the transportation of hemp and hemp products, no State or Indian tribe shall prohibit the transportation or shipment of hemp or hemp products produced in accordance with this subtitle. And so that's covering the interstate transportation of what is now legalized hemp.

So from EPA's perspective -- and I know this -- you know, this topic is of interest on the national level, but we are -- as the Federal Government, particularly the EPA, we're somewhat late to the game, which is why it's important really to hear from folks in this industry that have experience. We did not receive any applications for hemp products as part of the 2014 bill, so for registration of products to be used on cannabis or hemp as part of the 2014. And we currently have no applications pending for the

registration of hemp for the 2018. We're, I think, potentially getting close to receiving -- or at least in sort of my awareness.

Some of the pesticide labels that we have had in the past, they've listed hemp. There's maybe a handful, less than, you know, five. They were thinking of rope at the time. They weren't thinking of all the new uses for these hemp products when they were approved. And there are no tolerances currently in place established for marijuana or hemp in terms of labels.

And so as we -- as we hear from the speakers, I think there's a number of areas that EPA could really use feedback because this is a new agricultural commodity; because of the interest in growing this and because of what we understand are going to be the weed pressures that are going to exist, you know, growing this crop. How can we help with registrants who want to seek licensing and registration of these pesticides; help with the analysis and the understanding out there of what EPA is going to be looking at when we receive these applications.

And in the slide, I have an appendix which is somewhat outdated, but, you know, from 2018 on all the variant from Congressional Research Services, and this

list is quickly outdated because there's many, many, many uses for hemp that that's conceiving of and different ways of extracting the oils.

You know, one of the questions will be, you know, when you refine the oils from hemp, are you bringing any substances along with the process? So that's going to be some of the studies or information EPA could be looking at for a registration submission.

And I think, you know, these are just some small subset of questions that we are interested in hearing from PPDC and the speakers and sort of, you know, what is the production like and how are chemicals being used or intended to be used for use on these products? What are the crop production requirements and how do workers interact with the crop in terms of how it's grown and how is that different from other crops that are out there. Are there new and different exposures based on this crop that have not been modeled by EPA?

I think there's certain surrogates that exist, mint and hops and tobacco being certain analogous crops that are out there, but maybe not necessarily squarely fitting with the various uses that we're going to be seeing for hemp and the CBD oil that is sort of of great interest. And what are the

surrogate crops and similar scenarios that should be considered in assessing the potential risk?

So among many other questions, these are sort of just the ones that sort of bubbled up to the top, and then how can we, in answering and understanding these -- the answers to these questions, provide information to registrants that are interested in seeking adding hemp to the label with what type of studies we're going to be looking at; how we're going to be doing our risk assessments; waiting for other agencies to make certain calls with regard to food and the impact and the cascading effects that will occur as a result of those sort of activities.

So we've been engaged in a number of discussions. You know, it's only been since December that we've been on the scene as authorized through the Farm Bill, the enacted Farm Bill, and we are having preliminary conversations with the growers, with registrants, with other federal agencies, to really get a lay of the land here. And so your input into this process to make sure that we're looking forward and being strategic about how we move into this phase, which has already been sort of -- been operating in the states and having to deal with some of the issues before even the agencies here, the Federal Government,

have been working on them, will really be instructive for how we move forward on that.

So, with that, I will turn it over to our next speaker and welcome your comment.

DR. BENNETT: Good afternoon. Thank you so much for having me. And truly as a product of School House Rock myself, I appreciate the little homage to "I'm Just a Bill." That was very cool. I would have been even happier if you had broken out in song, but we won't go there.

MR. MESSINA: I can promise you that won't happen.

DR. BENNETT: You can always ask. All right. So my staff, as Ed introduced me, we're actually the ones who are writing the regulations to implement the 2018 Farm Bill enacted.

And so a couple of things I'll start out with, and then I can kind of give you the basics of how we are thinking about the regulations. First -- and this is something, and I say this to you because of all the people that have come to us over the last three months, recognizing that we were actually furloughed for 35 days. And so for much of this work, it's really happened at the end of January/first of February. And so we really are moving at lightning

speed.

The Farm Bill -- the 2018 Farm Bill enacted is actually quite limiting in what AMS will regulate. And I think that's really important to emphasize because us putting out the regulations, and when they become effective in the fall, it's not going to answer all of the questions. And it -- and it's not going to solve all of the problems.

The language tells AMS that we are going to oversee growing, farming. And as soon as products clears testing, right, it's no more than .3, it no longer is regulated by AMS right now. And so as it moves into commerce, as it gets further processed, all of those issues, that belongs to someone else. And whether that's another Agency, whether those are state decisions, just important to know that that exceeds the limits of what AMS believes is our jurisdiction with this particular Farm Bill.

And, additionally, we don't believe that seeds are covered under our jurisdiction. Looking at the Farm Bill, it says a product has to -- can't exceed .3. It doesn't really talk about, well, the seeds that you use or the seeds that you import or anything like that.

So, again, we're about helping farmers grow

the crop irrespective of the seeds that they might be using. So also very important, we have received so many questions about seeds, what can they use, how can they import, and that really is outside our jurisdiction. That's really important.

The other thing that I will tell you that I see a lot of because, again, my staff is also -- as AMS is the point Agency for this initiative, we receive so many questions. And many of them are just -- in addition to what states come to us or tribal nations come to us, or even organizations, industries and stuff, it's individual growers who go, so how do I grow this?

And I can't tell you how many times I have answered, well, the first thing I need to do is send you back to your State Department of Agriculture and check with them and see what they tell you to do, and whether or not you can even grow hemp commercially, legally in your state. And a lot of people don't even know that. I've had so many people from Colorado email me and go, how do I grow this? I'm like, really? You're from Colorado. So there's a lot of education that needs to happen because individual farmers just have no idea how to begin.

And I'm sure you've probably been told or

will be told, and we certainly heard it from so many people who have visited with us over these past few months, is it's not like you walk out into a field, throw some beans into the ground and voila. It really -- there's an art to this crop.

And especially because -- because there's been a line drawn. Right? As long as it is no more than .3, we call it hemp. If it's more than that, then it is an illegal substance. And so -- so getting people prepared to know how to grow hemp where they live, I think that's going to be a challenge across the country for all of us who are involved with hemp.

And so, again, just to let you know about kinds of the questions that I've been seeing is that, you know, people just don't even know how to begin. And if they don't know how to grow it, they probably -- or they may or may not be aware of what they can and can't use in terms of pesticides.

You know, some of the anecdotal information that we've received from states and from other organizations, testing labs, people who have come and talked to us, have said, you know, that when they test for this crop for whatever reason is that, you know, they are finding pesticides. And so we know that there's most likely use at some level.

So those are the big points that I think I'd like to convey. If you hear nothing else from me, is that our regulations are -- you know, there's a beginning and there's an end. It does not encompass everything. There are many things that will need to be decided over time. And so we need to be prepared for that. And, also, again, just the fact that many people are asking how to do that.

We do anticipate not only states and tribal nations coming to us saying we have plans that we want you to approve because we have growers that will grow, but also for any state that won't have a plan or tribal nation that won't have a plan, all of those individual growers will come under the USDA plan. And so it's working with all of those people. And we do expect thousands of people to be registered at least initially until this all kind of sorts out. So I'm sure there'll be a big gold rush at the beginning and then we'll kind of see how it falls out.

In terms of the regulation, I think we've been thinking about it really in two parts, kind of what I just said before. There's how do we set up the guidelines, the rules, that a state or tribal nation will need to follow if they have their own plan. That's really laid out nicely in the statute. So if

you read the statute, then you understand that we need basic information. People are either -- growers are licensed or there's some authorization that they can grow. There is a revision that you can't be a felon to grow unless you've been grandfathered in. We need information on the land that they're growing as well as the states and tribal nations will need to have some kind of compliance plan in place so that if crops -- sometimes we call it hot crops, happen, that they're disposed of appropriately, again, because they are -- they have become an illegal drug at that point, or they have an illegal chemical in them.

And then for the individual plants, or what the USDA plans, individual growers that come under the USDA plan, again, very similar. For the USDA plan, the law tells us that we will have a licensing program. Again, they cannot be felons unless they've been grandfathered in under the 2014 provisions. And, again, the same sorts of things. We will need to know information about who they are, where they live, the land that they're using to grow this crop; the crop has to be tested before it can be moved into commerce. Again, the extent of our regulations, they can't exceed the THC level no more than .3. And, yeah, I think that kind of covers the basic parts of what

we're doing.

I don't know that there's more than I can tell you. We're moving very quickly to get the regulations and declarants. So everything is becoming predecisional. Nothing is -- nothing to me is final until you see the regulations. What I can tell you is that the Secretary has made it very clear that he wants regulations in place, in time, in the fall so that we can be preparing everybody for the 2020 growing season.

And in the fall, then we expect to be seeing plans that will come across our desk to be approved; also to go ahead and get people licensed again in time for the 2020 growing season, planting season.

MR. MESSINA: Okay. Thank you, Dr. Bennett. I'll turn it over to Liza.

MS. TROSSBACH: Thank you. As Ed mentioned, I'm going to offer the pesticide regulatory official perspective. Just as a reminder to the group, AAPCO's membership is comprised of state lead agencies that conduct pesticide regulatory work as well as territories. We don't officially include tribes in that. Tribes are separate. And so while I'm going to be talking kind of in general about pesticide regulatory officials and our perspective, if there's

something you need to tribes, I'm going to rely on Eric to correct me or to add to the conversation because, you know, again, we're primarily state and territories. But I have a feeling we probably share many of the same concerns.

Maybe I don't know how to do this. Maybe I do. Okay. Or maybe I don't know what I'm doing. Thank you. So, again, from the impacts of the 2018 Farm Bill as enacted -- I've learned that, now I'm going to throw that into all my presentations moving forward -- obviously now there's an allowance for the commercial agricultural production of hemp, which is very new to all states. As was mentioned before, there were some states that did have programs that allowed the production of industrial hemp for research purposes. However, this is new because this is commercial agriculture production.

So you have pesticide regulatory agencies developing hemp programs. In many states, they are proposing or amending current regulations to now allow the commercial agricultural production of hemp. Oftentimes, these programs involve some type of credentialing program. So a grower may have to be, you know, registered or licensed or whatever that particular state, you know, indicates. And there are

specific requirements for that.

As you know, a state can be more restrictive than the federal law but cannot be less restrictive. So it is possible that some states may have more restrictive requirements. There is still a lot of ongoing research. There has been research into hemp and so there continues to be research at the state level.

Obviously, another implication is the options for pesticide use on hemp. As Ed had mentioned, there are very few products that actually list hemp on the label, and there are no food tolerances or exemptions from food tolerance for that. So that's another issue. I'll talk about that a little bit more in a moment.

Of course, other impacts. There's laboratory testing not only for the THC levels, but from my perspective on the pesticide use and the residues that may be found in products. As I believe everyone knows, the label is the law when it comes to pesticide use. And so those labels are dependent on the site of application. So it is possible that a product could be used and then because it's not allowed to be used on that particular crop, it could be an illegal use and there could be a potential enforcement action, yet

a whole ‘nother issue with regulatory programs.

Within states, there’s also the developing of the sampling protocols for hemp. As pesticide regulatory officials, we all have investigators or inspectors that work in the field. And this is something new to them. You know, they’re used to taking samples, vegetative samples, water samples, but what has to be taken for hemp, again, you know, a new agricultural product?

There’s method development for sample analysis that many of our labs are either going through or will have to go through. There’s storage and disposal of these samples, both from the perspective of -- from the THC, from that programmatic side, you know, if it’s greater than .3 percent, they have to be disposed of a certain way; if it’s a pesticide sample, that also has to be disposed of a certain way.

Many agencies are putting out food safety guidance for those food manufacturers and retail food establishments that are interested in the manufacturing or selling of food or dietary supplements that contains a hemp-related product or extract. For example, the CBD oil. And then there’s also guidance going out to processors planning to

produce hemp-derived products intended for human consumption.

This is, you know, another one of those items, you know, there's a determination or there will be a determination whether hemp is considered, one, a raw agricultural commodity, which will certainly influence pesticide regulatory programs, as well as if it's going to be considered a food crop. Right now, you know, we don't know so that will impact pesticide regulatory programs. There's transportation issues with hemp. It looks exactly like, you know, hemp versus marijuana.

For example, I think about my investigators, if they were stopped for some reason, an accident, you have the sample, let's say, that we had to take as part of an inspection or investigation, is it hemp, is it marijuana, and what are the implications for staff who are involved as part of their normal practices. And then, again, there's the destruction of a high value crop, which are things that states need to contend with as well as part of their programs.

So with the pesticide use on hemp, obviously beginning with the previous Farm Bill, 2014 enacted, there was research ongoing, you know, soils, growing conditions, harvest methods and pests. I believe Ed

had mentioned weeds. There's also a whole group of insect pests that are potentially -- or we know are associated with hemp, hemp production, spider mites, and then other bugs.

Hemp is many different kinds of crops. There's extract, seeds and fiber, and we would expect the pest management issues will vary depending on the production method and the end use.

And as with all agricultural production, it may be necessary to use pesticides to control some of these application of pests. Again, as I had mentioned before, all registered pesticides can only be legally applied to sites, for example, crops for which they are labeled. And prior to the 2018 Farm Bill, Cannabis is not recognized as a crop. So hemp, marijuana, ether of those. And so this crop does not appear on many labels.

I had mentioned that there are a handful of products that are registered for use. So there are currently -- now, this is based on research that I did from Virginia. I went to the National Pesticide Information Retrieval Systems, or NPIRS, which lists nationally products that are registered in each respective state. I searched for Virginia, which is where I'm from. And there are currently six

registered pesticides which list hemp on the pesticide label. And this is industrial hemp. This is not what we're talking about here. You can see the list of products. They're all plant growth regulators or synergists.

Again, there are no food tolerances or exemptions from food tolerances for hemp. These products currently cannot be used on hemp that is being grown for consumption. So if it is, in fact, food or raw agricultural commodity, then these products cannot be used in the production as one of the inputs.

So there are a variety of approaches to the use of pesticides on hemp that states are now grappling with. And as I said before, when you know how one state works, you know how one state works. Everybody is looking at it a little bit differently and are trying to decide what works for that particular state. So you're going to see the status of programs and what programs include are going to vary greatly at least, you know, at this time. There are some regulatory agencies that have decided just to default to the federally registered label. For those that list hemp, those can be used and no other products can be used legally.

There are other states that are considering a variety of criterion that may be applied when applicators are looking for pesticides in the control of pests. Some of those may be that the active ingredient is exempt from the requirements of a tolerance on all food crops; that the label directions for use are on an unspecified food crop. For example, you know, bedding plants, that the pesticide is either registered by EPA or exempt from registration under Section 25B; that the pesticide is registered by the state. Most states do require that pesticides be registered federally unless otherwise exempt, but then also registered within the state; and that the label language is sufficiently broad enough to allow the use on hemp and, of course, does not specifically prohibit the use on hemp. And there may be other criterion. These are just an example of some of the criterion that states are used.

Some of these have come from states that already have the legal use of marijuana, whether for medicinal and/or recreational use, and they have determined what will be allowed in those particular states. So some of these criterion are being used for marijuana in that production there.

And then some states also have decided they

will have a list of allowable products. They will make a determination of these are allowable, much like some of the states did with marijuana, and others have decided they don't want to make a list of products; rather, they may put out their criterion that says this is what will be allowed currently.

You know, in general with pesticide regulatory officials, I would say that we are looking to EPA for registration actions and to see what comes out of EPA. I think all -- you know, all states obviously have concern for human health and the environment. They want to make sure pesticides that are used are legal for use and are appropriate for use. There are many concerns on the part of regulatory officials on unregulated, you know, illegal and potentially unsafe use of pesticides to control pests. That's always a concern.

But particularly with this new commodity coming to the market and just a lack of information that was mentioned previously, we know from previous experience and other situations where there's a lack of information involved. Options, people will default to other sources like the internet, which does contain a lot of information and some of it is accurate and some of it is good. They'll also get, you know, that

magic formula from, hey, if you use this, there's a lot of hearsay. And there are serious concerns regarding that from a regulatory perspective.

I would say that pesticide regulatory officials are right now training their own staff. You know, this -- the move when I'm talking -- if we're talking about marijuana started, you know, on the West Coast and moved across, and so there's a lot of education summaries about this. But this production of agricultural hemp is new. So it's not only, you know, training staff about hemp, how it is produced and the actual production, and then also about pesticide use, its limitations, and then the State will have to determine how they're going to proceed. And so training our own staff is really important.

Collaborating with pesticide safety educators. Obviously, extensions are very strong partners of pesticide regulatory programs, so also coordinating and collaborating with extensions. Oftentimes, they are the first stop for agricultural producers. And so some of those questions about how do you grow hemp, well, those -- you know, if the USDA is sending them to state lead agencies, we're probably sending them to Extension because they are the, you know, experts and they're doing a lot of the research,

of course. And so we're going to move them back there. But really having to work with our extension educators so we have a consistent message about what is allowed and what is not allowed from a pesticide regulatory perspective.

And then really one of our big charges at total programmatically pesticides is one piece of this, is conducting outreach and education to growers. We have found at least in Virginia and with a number of states I've talked to, you have some very experienced agricultural producers that are used to production agriculture. They understand the laws and requirements and pesticide use and who their contact agencies are.

With this particular product, there's a lot of individuals getting into the market that are new to production agriculture. So they don't understand all the different aspects and facets of that. So -- and we found particularly with this product, this is the first time that I think we have seen something where you have a product that is so versatile. Ed put up kind of the schematic of all the different uses of hemp. And right now, it's really being looked at as a high value, low acreage ratio. And so that is very attractive to a lot of people. And while we certainly

aren't saying if you don't have any experience that you're not going to be able to do it, but there certainly are some additional challenges particularly from pesticide regulatory officials and for state lead agencies.

And with that, I will end. And we do have -- just real quick on the AAPCO.org. website, we will, as states start to progress, just talk more about hemp. There's already on that website information about cannabis and some of the states that have been regulating cannabis or marijuana previously. And I would say that as they move forward, there will be more information from a regulatory perspective on the AAPCO website. So, thank you.

MR. MESSINA: Thank you, Liza, for that. That was great. So now we have Kentucky Department of Agriculture on the phone.

MR. WILLIAMS: Yes. Can you hear me?

MR. MESSINA: Yes.

MR. WILLIAMS: Okay, great. I couldn't remember if we had it muted or not. But, yes, thank you. This is Michael Williams. I work in the Office of Consumer Environmental Protection here at the Department of Agriculture in Kentucky. And we appreciate the opportunity to participate in this call

and welcome the chance to share some of our concerns, questions or comments about hemp as it relates to the EPA regulatory process.

Kentucky was one of the first states, as you may well know, that developed a hemp research pilot program after the 2014 Farm Bill. That year, we had a little over 30 acres of research hemp that was planted. Since then, under Commissioner Quarles' leadership, KDA began a complete overhaul of our program to better support participants, KDA hemp staff and our state law enforcement folks.

This current season, in 2019, we have approved 987 licensed hemp growers to cultivate more than 56,000 acres of industrial hemp here in Kentucky. As a comparison to last year, we approved about 12,000 acres and about half of that was actually planted for various reasons.

Our comments this afternoon are focused on seeking some clear guidance from EPA on its plans to register pesticides for hemp. Right now, most hemp producers are applying the tolerance exempt pesticide products. But we know that as hemp production begins to transition from the research phase to the commercial side of things, scalability will be key. With larger scale production, there will be a need for

producers to have the ability, through the use of pesticides, to protect the crops from insects, disease and weed pressure or weed pests.

We are interested to learn more about where EPA stands in its process of approving products for hemp. We recognize that things don't always move as fast as we would like them to, and that also the EPA needs those tolerance studies that have been referenced in order to develop its full guidance.

However, we understand that EPA is working on a position paper regarding the approval of special local needs or our 24(c) process that we have the capability of doing in the states. An update on EPA's position here with that 24(c) process would be greatly appreciated as we are starting to get more and more requests from producers about how the Kentucky Department of Agriculture and EPA can assist them as they begin this larger scale production.

We also encourage EPA to fully explore, as mentioned previously, the multiple applications of hemp as you determine which products should be approved. For example, hemp produced -- that's grown for fiber is typically not consumed by humans as it was a few decades ago. We understand that crops grown for food use, like the oil or the seed, require

additional consideration as well as plants that are produced for the extract, the CBD oil.

But we believe that there may be some ways to expedite labeling some of these pesticide products for fiber crops. We also encourage EPA to consider adding hemp possibly to current pesticide labels that are registered for food crops that are similar to hemp. There was an example mentioned earlier about the mint, hops and tobacco. Doing so will provide a great lift to our producers as we get ready to expand growing operations here in Kentucky.

Lastly, a word about education. There is an energy in the hemp community here in Kentucky unlike any other crop in recent years. And a large part of that excitement is generated from our new and beginning producers who may very well be unfamiliar with EPA's registration of pesticide products to all that process. We would emphasize that education should be a key component of any administrative decision on hemp, and education will help protect producers, consumers and the environment.

Again, we appreciate the opportunity to participate in this phone call, and we are happy to provide any additional information about our experiences with hemp in these last few years if there

is any interest in that information.

With 56,000 acres approved for production this growing season, KDA and the people that we work with and for are anxious to have some guidance from our Federal partners about the road ahead for pesticide products and registration for commercial production. Thank you.

MR. MESSINA: All right. Thank you for those comments. Next we have Dr. Bob Pierce.

DR. PIERCE: Yes, I'm here. Can you hear me?

MR. MESSINA: Yes. Thank you.

DR. PIERCE: Okay, good. Thank you for the opportunity to speak today. I'm going to be speaking from somewhat of a grower perspective as an advisor to growers. And just to kind of start, to put some of the interest and excitement that we see with this crop into context, I think we have to recognize that nationally the agricultural economy has been stagnant in recent years with relatively low commodity prices and rising input prices. And particularly here in Kentucky, tobacco, which has been a long-time anchor of our agricultural economy, has declined significantly. And that has left a lot of growers, a lot of farmers, searching for alternative enterprises.

So industrial hemp, with these multiple uses

ranging from fiber to grain to CBD, has really ignited a firestorm of interest in the agricultural community.

As you heard the KDA speakers mention there, Kentucky did have one of the first research pilot programs, and that program has been very successful in terms of it's grown every year. You heard the numbers projected for 2019. And if these numbers hold true, hemp acreage could potentially surpass tobacco acreage in Kentucky for 2019.

Another reason that's driving this is that if you look at the projected economics for hemp production systems, they range from marginal profitability for fiber production to some just wildly speculative projected returns. I've heard of in the tens of thousands of dollars for CBD. And so that's driving some of these interests that we see.

Despite the interest and excitement, though, I think our growers have to realize that while hemp potentially has high rewards, it also comes with a great deal of risk, both market risk and production risk. The industry has developed and expanded so quickly that best production practices are still unknown, and growers have very limited tools right now to help protect their investments.

Now, some of the proponents of hemp early on

have claimed that this is a crop that can practically grow itself with little or no need for fertilizer or pesticides. And this might be true if you're growing a few plants in isolation, or if you see the feral plants growing by the roadside. But scaling up to commercial field production is going to require growers to protect their crops from weeds, insects and diseases in order to achieve the best economic returns.

Since that 2014 Farm Bill allowed research on hemp, scientists that in the various states have been working with it have observed that hemp does indeed have a number of diseases and insect pests that will -- - you will find on the plants. But currently we have very limited information that's been published about the impact that these pests may have on crop yields or best management practices for the control of such pests.

With multiple potential product streams for hemp, current production practices vary widely. And this leads to different pest problems, different pesticide needs, worker exposure patterns and possible consumer exposure patterns.

So it's clear that multiple tolerance levels will be necessary to cover the range of products and

potential application practices with this crop. With so much information that is going to have to be gathered to support these pesticide labeling efforts, I think it's going to be important for us to prioritize specific pesticide needs so that the field researchers can focus on collecting the necessary data so that we can get the most useful pesticides into the growers' hands as quickly and safely as possible.

I'm going to briefly outline some of the main production systems we're currently seeing in the field and give at least my thoughts on some of the implications that has for pesticide needs for this crop.

So producing hemp for fiber generally offers growers the opportunity for modest returns according to the projected enterprise budgets that we've seen. Seeding rates for fiber are quite high, 50 to 60 pounds of seed per acre. And with seed prices for this type of hemp ranging from $2 to as much as $8 a pound, the cost of seed alone can range from $100 to nearly $500 per acre.

Under favorable growing conditions, hemp can germinate quickly. And at the high seeding rates typical for fiber production, it's going to rapidly close the canopy, shading out a lot of the potential

competition from weeds. But under less than ideal conditions, if germination is delayed, the weeds can get ahead of the hemp and result in a significant competition leading to stand and/or yield loss.

The high plant population and the narrow rows used in fiber production make mechanical cultivation for weed control nearly impossible on a large scale. Insect pest in fiber production, on the other hand, are a relatively minor concern as long as the leaf feeding is not so severe as to cause a 50 percent or more defoliation. At the high densities, we can stand to lose a fair amount of the foliage that's there without really impacting yields.

But at the higher density, plant diseases could be a significant problem. Overall, I think the pesticide needs for a fiber only production system would be relatively low. But there would be times when growers would need pesticides to maintain a profitable fiber crop on a large scale.

Because of the marginal returns per acre projected for fiber crops, growers would be expected to plant large acreages and properly labeled pesticides would help with management on that scale. Additionally, the fiber growing system is pretty well suited to mechanization. So I would anticipate that

direct worker contact with treated crops would likely be fairly minimal from a worker exposure standpoint.

Producing hemp for grain offers growers the potential for slightly better returns per acre than fiber hemp. Grain production systems often utilize similar varieties to fiber production, but planted a bit later in the spring to minimize the plant height for easier grain harvest.

Seeding rates in this, the planting densities are about half of what was used in fiber production systems. So weed competition and thus the need for effective herbicides would be expected to be greater for grain hemp.

Insect feeding would also be more troublesome. Research on other types of grain crops has shown very clearly that grain yields are correlated with leaf area. So reductions in leaf area from insect feeding could result in reduced yields, though this has not been documented in the literature specifically for hemp as of yet.

Overall, the need for pesticides to maintain economical production levels would be slightly higher for grain as compared to fiber production. However, like fiber, grain production would likely be mechanized so worker contact with treated crops would

still be fairly minimal.

Systems for CBD production range from direct seeded systems similar to the grain production model to transplant-based models at very low plant densities. Production cost estimates vary widely. But some growers are paying up to $1 per seed or as much as $4 to $8 per plant for specialized varieties that have reportedly been optimized for CBD production.

As a result, the cost of establishment for a CBD can reach into the thousands of dollars per acre. The plants for the transplant-based models are typically grown from cuttings or sometimes from seed in a greenhouse. And we've already observed a number of disease and insect issues in these enclosed growing environments.

Currently our growers are using cultural methods and a limited number of non-chemical home remedies, we might say, to manage these problems with somewhat mixed success. As growers continue to utilize these same facilities over time, though, we can expect to see pest problems build up and increase in severity without having appropriate controls in place to control these pests.

Without effective herbicides to help control

weeds at the much lower planting density typical of the transplanted systems, growers will be forced to rely on manual weed control throughout the season, leading to higher labor costs. Disease pressure should be somewhat less in lower population systems, but insect pressure may be worse because you have fewer plants and so you'll have more insects per plant feeding on those fewer plants that are out there.

At low plant populations, there's a premium on protecting each individual plant, especially if you're paying $4 to $8 just for the plant to start with. So overall pesticide needs for these systems will likely be a bit higher than for grain or fiber systems.

Additionally, many of the CBD production systems rely heavily on manual labor for harvest and post-harvest processing, thus the potential for worker exposure to treated crops will likely need to be considered when planning a pest control strategy.

Now, another potential issues that's recently come to my attention through a grower question has to do with labeling on -- pesticide labeling for other crops that may precede hemp in a typical on-farm rotation. So many pesticide labels, especially herbicides, include statements that establish

rotational crop restrictions. Since hemp has only recently been recognized as a crop, it has not been tested for these rotational restrictions. And in a lot of these cases, the labels, if a crop has not been tested, it goes into the longest rotational category for that product.

So there's one specific product that I was asked to look at recently. It's commonly used in soybean production and it would actually restrict the planting of untested rotational crops for 40 months following the application of that particular herbicide. So that would mean that hemp might not be able to -- might not be planted behind a number of common agricultural crops due to the restrictive nature of these rotational guidelines.

So this brings up some questions, I think, about the intentions of the rotational restrictions on the pesticide labels. You know, are those rotational restrictions on the labels primarily because the manufacturers are trying to minimize or want to minimize the chance of subsequent crop injury, or are the rotational restrictions there because of concerns for residues that might appear into the rotational crops?

If we take a very strict interpretation of

the labels in these case, it would mean hemp could not be planted behind some of these crops. So I think we need some clarification of those rotational restrictions as growers begin to incorporate hemp into their overall crop rotation.

So growers need effective, safe and reliable pesticide options in order to make hemp a viable crop that will contribute to a more diversified agricultural economy. With the high cost of establishment and the financial pressure for the growers to succeed, they may be tempted to use products off label if they believe it will help them to save that crop and recover their investment in the planting of that crop.

The lack of properly labeled options could lead to use of excessive or potentially ineffective rates or use at the wrong time. Appropriate label guidance and education is necessary to provide growers with the best management practices that will limit environmental risks, minimize worker and consumer exposure and protect grower returns.

Bio-based pesticides that were mentioned are a good first target, but growers will need more reliable options as well. Bio-based pesticides often show promise in laboratory and enclosed environments,

but very often are inconsistent when put out in the broader field environment at a larger scale.

The patchwork of state regulations or labels for pesticide use on hemp will be confusing to growers and that can also promote misuse. It's been my experience over the years that growers have very extensive networks, and if they hear that a product is labeled or being used in one state for a particular problem, they'll be much more likely to try that particular product on their farm if they think it can help.

So I think what we need or what is needed is a comprehensive national plan that identifies pests with the most potential to cause losses and pesticides that can be used to manage those pests, and that EPA, in consultation with industry, grower representatives, should prioritize the most pressing needs and establish a clear list of the data that's needed to support that labeling so researchers can really focus their efforts on those areas and those pesticides with the greatest potential to improve the production practices for hemp growers.

As this knowledge is developed, land grant institutions and universities can assist with the distribution of knowledge through cooperative

extension. Ultimately, the development of a good program of agricultural practices that includes the judicious use of pesticides in hemp production will ensure the integrity, quality and safety of the products produced.

This, of course, is going to require considerable investment of resources and cooperation among the nascent hemp industry, the crop production industry, universities and state and federal agencies. I thank you for the opportunity to present these comments.

MR. MESSINA: Thank you, Dr. Pierce, for those very thoughtful comments.

Next is Steve Bevan from GenCanna to represent the commercial perspective on hemp and CBD production. Steve?

MR. BEVAN: Thank you very much for having me here today. As others have said, we're here today because of the Hemp Farming Act of 2018 as it was fully embedded in the Farm Bill. The simple legislation had two clear goals: One, the removal of hemp and hemp-derived products from the Controlled Substances Act; Two, the establishment of a simple regulatory regime under USDA to allow U.S. farmers to grow hemp as any other crop.

We're here today to discuss the needs of hemp farmers in achieving that second goal. As long -- as long-time participants in Kentucky's industrial hemp pilot program, we're heading into our sixth season planting federally legal hemp outdoors. It hasn't always been easy, but we are grateful for the leadership that originates from Kentucky from former Ag commissioner, now Congressman, Jamie Comer, to long-time supporter of hemp, Senator Rand Paul, to the nation's clear leader in hemp regulation, KDA's mindful commissioner, Ryan Quarles, to the champion of federally legal hemp, Senate Majority Leader McConnell; not to mention all of the incredible staffers who have been working tirelessly behind the scenes to re-establish Kentucky as the nation's leader in hemp production.

When GenCanna arrived in Kentucky in 2014, it was unclear how KDA was going to receive us. The fundamental problem was, and still is to some degree, that hemp and hemp products don't fit into the existing modern regulatory structure because they had been forbidden. Indeed, it was unclear how law enforcement would view hemp, but we simply worked our way through it. We cooperated at every instance, testing procedures, transportation issues, quality

issues, much of which has been discussed earlier; expectations, fears. It didn't matter because folks like Doris at KDA; Kaitlin from Leader McConnell's office; Micah from Senator Paul's Lexington office; they've all been steadfast in their support for hemp farming and processing.

And others in other states, most notably Colorado and recently Oregon, have come on board and worked together. Support from law enforcement, local officials, state regulators, legislators and committees at all levels have been nothing but emphatic and nonpartisan. Hemp is nonpartisan. Everyone wants to help farmers farm. The nation wants to see more hemp farmers cultivating hemp. They want to assist American hemp farmers and they want to buy quality products from American hemp farmers.

Recent data shows last year's retail sales in hemp products at well over one billion dollars. This year, those consumer sales are expected to more than quadruple. The news coming out of CVS recently that they're putting CBD products on shelves in 800 stores; a beverage maker is adding hemp-derived CBD to drinks; manufacturers of Oreo cookies and more, they indicate a keen interest in hemp-derived products and point to robust demand.

Internally, my company's sales and our customers' demand indicate that this exponential growth may actually be understated. So while the growth of the industry might be understated, the effect of this hemp crop on rural economies cannot be overstated. We have hired well over 200 people throughout rural Kentucky all downstream of farming. We are presently building America's largest and most modern hemp processing facility in Mayfield, Kentucky, with phase one and two costs well over $60 million; with additional expected employment of over 100 folks.

Specifically, this is built to handle the burgeoning acreage that our family farming partners will put in the ground this year and next. So the future seems bright.

And to some, hemp has an idyllic future. There are romanticized notions of hemp and hemp-derived products curing all ails from polluted grounds to severe illnesses, and, of course, clothing for all. But that's not real. Maybe in the future, but much more research and experience is needed.

Perhaps the most important words in Hemp Farming Act of 2018 is the simple description of hemp as a crop, just like any other crop. Corn, beans, oranges, coffee, hops or tobacco. This is what is

real. And this is why we are here today. Hemp is new again to American farmers. It was difficult and not well understood just several years ago, but the improving quality of genetics, better agronomic practices, better harvest automation and the simple but valuable hands-on experience are all improving the success rate of the new American hemp farmer, and evolving as one might expect.

Kentucky's program expansion, as you've just heard, demonstrates this clearly. 56,000 acres approved this year. That is compared to 70,000 acres in all of Canada last year. Canada has a hemp cultivation history of over two decades.

So we -- we are very encouraged by some recent conversations with AMS, with RMA at USDA. Both agencies are taking leadership to help American farmers. And FDA, while somewhat confusing, has actually been regulating hemp-derived products successfully for years.

There is a significant missing part to the new American hemp cultivation, something every other American crop enjoys, labeled chemistry to assist in crop health. We understand no one wants more work. No one wants to step outside normal processes. But to ensure success ad mitigate risk for farmers, we must

act.

So why do we need to do this for hemp? Well, hemp isn't all easy. As we've learned growing in Kentucky, there are things like leaf spot. There are mites as we've heard about. They cause problems. It's only a matter of time that -- before there will be specialized pests that impact the hemp industry, perhaps like tobacco worm, potato blight, western corn root worm, banana disease, et cetera. These sorts of things would be devastating to American hemp farmers, not to mention the downstream rural jobs created out of hemp production.

So farmers should be able to utilize tools available to mitigate these hazards. Many of these tools, including pesticides, herbicides and fungicides, are already labeled for some mainstream agriculture at safe levels. So what will it take to include hemp?

America's new hemp farmers need to be certain that they are productively growing safe and reliable products to satisfy America's growing appetite for hemp-derived products. The rural economies that are experiencing a rejuvenation and proving the wisdom of Congress in legalizing hemp in Kentucky and Colorado and Oregon and across the country need access to the

full agricultural tool box.

How do we move this idea forward? We're willing and able as an industry and as a company to help the EPA and American hemp farmers resolve the needs for safe hemp production by finding an iterative plan to start allowing for some restricted use. We need to encourage cooperation by regulators, researchers, American hemp farmers and the established industry to encourage the quick accessibility to food safe, even organic, pesticides.

We should take into consideration that there is an allowable use list of chemistry for all organic production. Those listed should be allowed for use in hemp production as well. We strongly encourage sustainable and regenerative crop and land management practices to prevent pest pressures, and, of course, conserve resources. As this happens, we are learning and collecting data to support the responsible use of pest and pathogen prevention or control.

For the regulators, any organic pesticide, herbicide or fungicide or biological preventative or enhancer allowed -- I didn't write this as you can tell -- allowed for use by the USDA or any other registered state certification program, should be considered for the use, prevention or management of

America's hemp crop and production. Perhaps this includes some existing tolerance-exempt products.

But in the interest of time, and to mitigate risk for farmers, we need to accelerate the plan to research safe organic pesticides for quick labeling. That includes access to food safe products that reduce hemp crop risks to farmers, that ensures hemp plant health for consumers, and that encourages confidence from all stakeholders in this new crop.

Hemp was included in the Farm Bill for a reason, to help farmers farm. It was a once-in-a-generation, perhaps a lifetime, chance to reset economic opportunities for farmers. Now is the time to act. We are open for business and willing to be part of working towards the solution for farmers, for workers and consumers. Thank you for your time and consideration.

MR. MESSINA: Thank you, Steve, for those comments.

Last but not least, we have Dr. Tony Brannon from Murray State University representing the academic grower commercial perspective. Was he able to join or no? Dr. Brannon, are you able to join?

(No response.)

MR. MESSINA: Okay. He should be on. We're

not hearing your conversation if your phone is on mute or -- we didn't mute --

DR. BRANNON: Can you hear me now? Okay? Can you hear me now?

MR. MESSINA: Yes, we can. Thank you.

DR. BRANNON: Okay. I'm sorry. I had unmuted on this end, but I didn't realize I wasn't on. So --

MR. MESSINA: Yeah. No, we --

DR. BRANNON: Greetings from --

MR. MESSINA: Apologies. We muted you from our end. So you're good to go now.

DR. BRANNON: Okay. Thank you very much, and greetings from West Kentucky; from Murray State University. Murray State is a regional comprehensive university on the far western end of Kentucky. And we've been a leader in the hemp industry in Kentucky since its inception. We've remained active in research, education, policy and innovation, and particularly in working with growers and farmers as this new crop is implemented.

The 2018 Farm Bill, one of the benefits of going last is a lot of things have already been covered. So I'll try to cut out any redundancy. But as has been mentioned, the 2018 Farm Bill with

leadership from senators and representatives from our state reclassified hemp as an agricultural commodity, which is what was needed.

Since that time, agricultural hemp, as I call it, instead of using the word "industrial hemp" because we don't call corn in our area -- we don't call it ethanol corn or we don't call soy beans swine feed soy beans. We simply will call this agricultural hemp. It is at the center of most all the agriculture conversation both on the farm and throughout higher education and industry and economic development circles in agriculture in our area.

The Kentucky Department of Agriculture Commissioner Ryan Quarles has publicly stated that he wants Kentucky to be a leader of hemp production in the United States and, in fact, that we are on the epicenter of hemp production. And if Kentucky is on the epicenter, I can testify that Murray State University is on the fault line in our region.

There are no less than 13 grower or processing centers within 60 miles, that have sprung up within 60 miles of Murray State University. And, obviously, Kentucky has approved the planning of over 50,000 acres of hemp in 2019. And a good majority of that will be located here in the western end of the

state. So it is all around us.

Murray State University was unique in that we were the first to plant and grow agricultural hemp under the 2014 pilot bill. Our seed came through and we planted it on May the 14th, 2014, and we have been working with it since that time.

In the five years, we've learned some things but we haven't learned near as much as what is needed. On March the 1st, the University Board of Regents unanimously approved the establishment of a center for agricultural hemp to be overseen by the Hutson School of Agriculture here at Murray State. It will be headquartered here at the main campus and work in cooperation with industry demands such as with GenCanna and my friend, Steve Bevan, throughout this region and with our university farms located here in Calloway and even as far away as Ballard County, Kentucky.

The purpose of this center or the operation of this center is to secure private support to fund activities, research, development and programs for the newly established center. Activities are expected to be centered around the following initiatives: And I'll start with agronomy, which is kind of what we're talking about today. And in agronomy, we need

research, field trials, development and even harvesting, which may not have been mentioned too much today.

But I have the unique opportunity of having grown up on a specialized dark tobacco farm here in Western Kentucky. Our region has history with specialized crops grown on small acreages at relatively high value, and certainly hemp fits that.

I was born in 1959, and in the early 1960s, as I was growing up, have pictures of me in the tobacco patch and in, with another crop, I'm going to make an analogy to, soy beans. In the early 1960s, soy beans in our region were considered a forage crop. We cut them -- we cut them for hay and fed them to livestock. Certainly that was before chemicals and that was before mechanical harvesting of self-propelled combines.

Basically my dad used to refer to it as we had the Santa Claus method of taking care of that crop, and that is we went in the field and we went ho-ho-ho. So I hope everybody can laugh at that.

But, anyway --

MR. MESSINA: They are all laughing, yeah.

DR. BRANNON: That's where we are with hemp.

MR. MESSINA: Okay.

DR. BRANNON: That's where we are in hemp in 2019. It's the same place that soy beans was in 1960. I don't know if there was any teleconferences in 1960 about how are we going to deal with this crop, but I distinctly remember the first chemical that I remember using on soy beans where we didn't use mechanical cultivation was Treflan. And it was -- you either used it or you didn't use anything.

Well, we know in 2019 what's happened with the soy bean industry, how it's developed, how many products there are to use on that acreage that allow us to have a sustainable crop; to have a crop that's grown and is grown efficiently and productively for the farmers of our region.

So at this -- at this time with hemp, we have no chemistry. We have no chemicals. We have no harvesting. And certainly those are two of the big hurdles that we're going to have to clear to make that crop -- make hemp the sustainable crop that I know that it can be.

We certainly need herbicides. We've had some trials as has been mentioned at the University of Kentucky and at Western Kentucky University. And I've worked closely with the chemical partners that are on

our farm for soy beans and corn. And heretofore to the 2018 Farm Bill, that's fallen on deaf ears because there was just not the acreage. They certainly didn't want to do anything with a crop that hadn't been cleared legally and federally like it has been now. So heretofore it's been hands off. But I think since the 2018 Farm Bill we've seen a renewed interest on that.

Another factor that's particularly important to consider is that there's been no USDA funding of any -- of any of these crops. It's all been privately or corporately supported as we've moved forward, or university supported internally. It's certainly our hope that the USDA funding will contribute to this industry much the same as they have the development and expansion of the soy bean industry throughout the 1990s and the 2000s.

And it is also important, I think, to note when we're talking about the agronomy is, it's been mentioned there's several methods of production and of end result for the crop. Fiber, seed and certainly CBD. Obviously CBD gets the most of the play in our area. It's important to note that of the 110 or so processors in Kentucky, there are only two fiber processing applications that have been approved that

are working. One of those that's in our area is in a hemp wood plant that is to make hardwood flooring and siding and other wood products out of hemp. And that's certainly been a lot of interest in that. But the majority of the interest has been in the CBD area.

As the 2018 Farm Bill took the blinders off of this industry, we certainly need to move forward in other areas. Other areas that we'll be looking at is CBD both in the processing and the research, and I'll go to an area that we think about it being as supplements, but I don't think it's been mentioned too much about the potential that we have here for animal feeds. Certainly we have some rudimentary trials that we work with on poultry that was allowed under the 2014 Farm Bill for our university. That looks very, very promising as we sit here in the middle of the poultry industry, which is our state's number one industry in agriculture in Kentucky. So there's some promising trials that are there.

There's some manufacturing product development and support that is needed. Certainly some education. We work with 1,100 ag students. And to tell you that hemp has caught their attention would be an understatement. We now have three interns already employed with an area company and I get job

inquiries every day. And certainly working with our foundational partners, we're going to continue to do that.

Farmer-grower leadership programs. You know, sharing of information is different in 2019 than it was in 1960. And certainly we have very capable farmers. Given the right tools, the right chemistry, the right harvesting, the right economics, farmers will be overproducing this crop in a matter of years. And so we look forward to working with those farmer-grower leadership programs, and certainly, as I mentioned, internship programs.

On behalf of our region and particularly the foundational partners that we have, including GenCanna that's testified today, CB Sciences is one of our foundational partners and actually provided the first seeds that we grew with, a national leader. Vertical Hemp and Unified Ag Holdings here in Calloway County, on behalf of those corporations and industries and on behalf of our region, the hemp industry, all of our students, our university community, this is not just an agricultural development opportunity but it is a rural development opportunity for a much needed boost to our regional economy, and certainly is as much economic development as it is agriculture.

Thank you for your consideration of progressing and moving this industry forward. Thank you.

MR. MESSINA: Thank you, Dr. Brannon, and thank you for doing a phenomenal job of batting last.

So with that, can we put the maybe questions up there? Before I kick it over to Rick to --

(Phone interruption.)

MR. MESSINA: -- just from my perspective, I agree with the comments of triaging and really understanding what are the grower needs out there working with registrants and what are those particular active ingredients that the growers are really interested in sort of doing those first and then working through what studies and the risk assessments associated with that.

And to that end, offering up the ability as once we had these conversations for presubmissions, presubmission conversations with the Agency to make sure that any applications that we do receive have the best likelihood of success. So I would just throw that out there for registrants that are interested in having conversations with us as you're talking with growers and researchers. And the ag extension folks were happy to participate in those conversations.

And on the 24(c) issue, I think in terms of answering that question, I think it's got the same issues with regard to what are the tolerances associated. So I think the states would have to come forward and show the tolerance exemption issues associated with that.

I think the biopesticides piece is real interesting, and maybe as some early quick wins we look to those products that are tolerance exempt. And so as a result for purposes of use in food testing, we know that those products that have mode of actions that are safe, the 25Bs are, you know, good options that we sort of explore first.

But the more intense conversation is going to be around the chemicals where we need to establish tolerances and how do we -- what testing do we require and all the various uses that are out there. So, again, really getting input from you guys on your perspective in that regard sort of as a step two as we move towards providing registrations when we receive them from registrants.

With that, I'll see if there's any questions and turn it over to Rick to field questions. And we're good on time. We saved -- we saved lots of time for questions. We've got another 40 minutes.

MR. KEIGWIN: Okay. So the first cards I see up are Nina and then Andy.

MS. WILSON: Thank you. That was an interesting session. I think everybody is very interested in what's going on with hemp. The biological products industry, as you noted, is very interested and would consider hemp to be like any other crop that would be granted under an exemption from tolerance. However, the industry would like on a case-by-case basis, to make their own decisions about whether they explicitly put hemp on the label or not because obviously there are some maybe physiological or company reasons why they would want to do that. So they would put that on the label or put it on their marketing items.

The second question -- I actually have a question now. I'm not sure I understand, Liza, your presentation where you talked about pesticides with referenced use on hemp or industrial hemp. So they're not food. So this implies that there are current registrations for non-food items for hemp?

MS. TROSSBACH: There are -- based on the research that I did for Virginia using the National Pesticide Information, there are currently six federally registered products that list hemp. But

those products don't have a food tolerance or nor are they exempt from a food tolerance. So assuming that hemp is food and we're looking at it that way, they could not legally be used on a crop that was grown -- or hemp that was grown for consumption.

MS. WILSON: But, theoretically, even if it's for a non-food item, a pesticide use would still be considered, the labeled use at EPA would have to look at register and consider risk assessment. Am I -- I think I'm missing something.

MR. KEIGWIN: So I think -- so Liza -- I've done similar research to Liza and came up with similar results. Because the products that are currently registered on industrial hemp don't have a tolerance, if hemp is considered to be food that would have to be a discussion between EPA and the Food & Drug Administration since they are the enforcers of tolerances and tolerance exemptions, whether or not if residues were found in products of hemp that were deemed to be food; whether or not those products would be considered to be adulterated.

We haven't had that conversation. You know, presumably -- and I think the labels actually say industrial hemp. That was -- and so I think what was envisioned at the time of those registrations, it was

more for the fiber use.

MS. WILSON: But I can't put something on my label now if it's a non-food use, whether it's registered or not.

MR. KEIGWIN: Well, I'm not sure I understand your question. These are companies that applied to have hemp listed on their label.

MS. WILSON: Okay.

MR. KEIGWIN: In the past.

MS. WILSON: In the past, okay. But --

MR. KEIGWIN: As Ed noted earlier on, since the enactment of the 2018 Farm Bill, we have not received any registration applications.

MS. WILSON: Right. But prior to this, it wasn't a federally recognized crop. Correct?

MR. KEIGWIN: Well, there were conditions under which hemp could be grown under the enacted 2014 Farm Bill.

MS. WILSON: 2018, but not before 2018.

MR. KEIGWIN: The 2014 Farm Bill also had provisions.

MS. WILSON: Okay. So these are between 2014 and 2018 is what you're saying.

MR. KEIGWIN: I can't speak to when they were

added.

MS. WILSON: Okay. And I -- I don't see any difference regarding to the RACs and the processed commodities and identifying those. I mean, what you're doing is talking to the industry and trying to figure out what goes where. And I don't see that that would be any different from any other, you know, guidance document that we have now on residue testing.

MR. KEIGWIN: I think the question is what residue testing would we need and how and, as we do with other crops, how many field trials and what regions, what processed commodities would we want to need to look at. Is there concentration when applying it to the plant in the oil? Those types of considerations I think we're going to need to explore as this crop becomes more further introduced into the agricultural economy.

MS. WILSON: So you would -- so I ask this question from the industry. So you would say that potentially depending on what comes out of that, which I assume is the same process where you would talk to industry to figure out how things are grown, what are they used for, what parts go where, what parts you test, how you test for it, you know, acreage would inform the number of trials and regional trials,

whatever. Could you -- could you call -- would you foresee that you would be able to label or you would label for hemp for a specific use, or would you want to see hemp -- industrial hemp be covered for multiple uses?

MR. KEIGWIN: These are one of many questions that we are all going to have to explore I think initially between FDA, USDA and EPA as it relates to the use of pesticides in growing this crop. And part of what we want to accomplish today are what are the questions that we all need to be considering as we work together to develop guidance for the industry. So thank you for that.

Andy, then Sharon, then Dan.

MR. WHITTINGTON: Just because I met with Amy Monday and this is still fresh on my mind. But I think this is an excellent opportunity for us to be proactive in practicing resistance management. And if we're going to approve products for the class, I think we could be very proactive in approving multiple modes of action for the same test and employing a rotational schedule of those chemistries to prevent resistance in the -- in the plant or the insects.

MR. KEIGWIN: All right. Thanks, Andy. Sharon, then Dan, then Charlotte.

MS. SELVAGGIO: Okay. Thank you. That was such an interesting set of presentations; really appreciate it. I have a few questions and I have a few kind of thoughts. But, one, when a product is ultimately processed into a medicine, is that exempt from the tolerance requirements? Is it just when a residue might be present in a food that it's subject to the EPA?

MR. KEIGWIN: EPA sets tolerances on the raw agricultural commodity as it relates to food consumption.

MS. SELVAGGIO: Okay. So the medicinal uses of hemp would not then be subject to federal regulation as far as the tolerance questions.

MR. KEIGWIN: That's I think one of the questions we'll be having with FDA is, does FDA set a tolerance or does EPA set the tolerance?

MS. SELVAGGIO: So you do anticipate that a tolerance would be --

MR. KEIGWIN: I think that's one of the questions. You know, both the EPA and FDA operate under the same statute as it relates to setting of tolerances.

MS. SELVAGGIO: Okay.

MR. KEIGWIN: So FDA sets them for food

additives and for other purposes, and we set them for the food.

MS. SELVAGGIO: Okay, okay.

MR. KEIGWIN: So I think as we work through this together, that's -- we're compiling the list of questions for EPA, and I think that's an important one.

MS. SELVAGGIO: Okay. And just looking at this list, I mean, I don't -- you know, I don't know. Is this, like, an extremely diverse list of products for any particular agricultural commodity? It seems to me like to your question about exposures, if there are this many different products -- and I'm kind of even confused about this, but I know that, you know, we probably import a lot of hemp products right now from other countries. But, you know, it seems like the range of exposures that a person could be subjected to might be, you know, quite high thinking about the many different ways in which they might come into contact.

And so just to that question, it seems like, wow, yeah, the whole exposure analysis seems like it will be really, really important to get that right. And so I guess one thing -- I mean, I think it's like -- this is really interesting from the standpoint just

hearing about the stats that we heard from Kentucky and sort of the opportunities that a lot of land owners and growers have to substitute a declining crop for a crop that actually has, you know, potential for real high market value.

And I look at it also from a different perspective, which is, wow, we've got an opportunity to transform some agricultural systems and watersheds perhaps, and maybe this is a great opportunity to really think broadly about beyond individual grower economics, but also be thinking about the kind of watershed conditions that we want to have; the kind of landscape conditions that we want to have; and making sure that we -- if we have an opportunity to do so, you know, to reduce the total amount of pesticides that is used across the landscape.

And so I'm curious because there really wasn't much said about it. But what is the current state of the IMP research on hemp? I mean, it sounds like there's been research going on for at least a few years, but we didn't hear a whole lot. And I would be sad if there was sort of a gold rush into, you know, let's approve all these pesticide registrations for hemp without simultaneously putting just as much effort into the IPM methods to manage these pests that

might occur, but, you know, without pesticides.

And I know that's not necessarily EPA's purview, but I do bring it up because when we were talking about the public health stuff, you know, you talked about how it's part of EPA's mission to also get IPM information out there. So I just think that's kind of important.

I guess my last question about this with the risk assessments that you do, when you are looking at changing labels to expand, you know, labeled uses, it's going to change perhaps our understanding of pesticide use across the landscape. We might see some pretty big differences. And we've got things like endangered species assessments that are, you know, under way, in process. You know, how is that going to respond to these changing -- these dynamically changing landscape scenarios?

So, I mean, just something to keep in mind, I think, that we'll have to -- you know, EPA will have to grapple with.

MR. KEIGWIN: Okay. Thanks, Sharon. Dan, then Charlotte.

MR. KUNKEL: Thanks, Rick. And maybe just adding to the enthusiasm around this commodity, the IR-4 program, we generate data to register products

for specialty crops, minor crops, and that includes the biological products as well as the conventional products.

But -- so we've seen a lot of enthusiasm around hemp. We're getting a lot of requests. We're getting requests on how to use biological products. What are the data requirements for conventional products? So we're very interested in the questions that Ed poses up there. We have some ideas. Surrogate crops, very similar to some of the commodities that Ed mentioned as well.

But we get the same feeling that the growers are getting desperate on tools to add to their toolbox. So we'd like to participate in the conversation. Thanks.

MR. KEIGWIN: Charlotte and then Pat.

MS. LIANG: Okay. Thanks. So now unless you can correct me if I misunderstood. There's a lot of good information here. So I assume that field research on registration of crop protection products for use on hemp would require growers to be registered or licensed under state programs or USDA programs, and will EPA have -- like, what kind of role do you see EPA having in verifying that -- you know, that research is conducted on legally-grown hemp?

MR. KEIGWIN: Do you want to --

MS. BENNETT: Could you rephrase your question again? I'm not quite sure I understand what you're asking.

MS. LIANG: Yeah. With -- EPA would have a role, you know, in verifying that research is conducted on legally-grown hemp? Maybe I misheard what was said earlier, but --

UNIDENTIFIED MALE: What was the comment that you --

MS. LIANG: Now I can't remember this (inaudible). But, you know, I was just making sure that, you know, the whole process is done legally. Right?

MS. BENNETT: Okay. So, again, I'll say again, so for me it's also talking about jurisdiction. So the statute tells AMS in order for somebody to grow hemp, they need to provide information on the land they're growing; they need to be licensed in some form or fashion. But honestly licensing, according to the statute, really says you're not a felon, you've done a criminal history check, you've given us your name and your address and that sort of stuff.

There really isn't anything in this statute that says -- and you're doing it appropriately, right?

I mean, for us, the line of appropriateness is really at the end of the -- towards the end of the harvest when the crop is tested and it doesn't exceed THC. And that is really the extent of AMS's jurisdiction.

So anything about using pesticides appropriately, again, would either fall to EPA or perhaps whatever the states are regulating relative to compliance and making sure that their growers are following the appropriate regulations.

MS. LIANG: Okay. Yeah, thanks. I was really thinking from the compliance perspective.

MS. BENNETT: Right. So for compliance, for AMS again, jurisdiction is all about the THC. So that really is the extent of what we're verifying. And the fact that they're appropriately licensed, right? So you're licensed and you're growing a crop that is legally defined as hemp and nothing more.

MR. KEIGWIN: Okay. Pat?

PAT: Yeah. I mean, just a follow up, I think, a little bit more on what Sharon was saying. I mean, the uses for this thing seems to be, you know, quite extensive. I mean, clothing, building materials, food, salad oil, you know, shampoo. It's -- so I guess I'm curious as to how EPA would -- first of all, if a grower is growing it, how do you know

what they're growing it for? Are they growing it just for fiber or are they actually going to use some of it towards, you know, food products or personal care products. And would it be -- would the pesticide have to be, you know, applied in different ways depending on what they're growing it for and the tolerances, you know, would be different.

And, I mean, I think there are probably some crops like corn and soy beans that have, you know, numerous uses that may be a model, I don't know quite how you'd do that now. But have you given any thought to, like, how that would -- that process would occur as to how you would actually, you know, decide how much pesticide can be used and how the product is actually -- the end product that comes out of it, you know, would depend on that.

MS. BENNETT: So I'll just start and just say right now hemp is hemp to AMS. So we don't have any say in, oh, you're growing it for fiber; you're growing it for consumption or whatever, or CBD oils. That -- that's it. And so, again, if it doesn't have -- as long as it doesn't exceed the THC. And whatever it becomes afterwards, then unfortunately, I'm sorry, it's somebody else's problem.

MR. MESSINA: Thank you. Yeah, I mean,

the slide I put up there was meant to be provocative. Right? I mean, it's sort of -- in reading up on this and all the various uses. And, again, there's more. It's going to be a challenge and it's going to be a heavy lift. But I think that's exactly where and, you know, the questions are good ones where we need to have some presubmission conversations with registrants who are willing. Hopefully, I didn't imply otherwise. And the growers for where these end uses are going. Because it couldn't be that we're going to limit, you know, what the particular pesticide for that particular use -- that seems unworkable. But --

MR. KEIGWIN: Yeah. I mean, Pat, I think your point is a good one. You know, and there are other crops that, you know, their derivative products go to multiple places. So that may be one model. There may be some ways in which hemp is being grown or hemp is being processed into products that we haven't typically looked at it from an exposure scenario. So those are some of the other things I think we have to think about.

So, you know, like with the diagram that Ed projected, you know, those are just some of the end use products. And so how -- what are the exposure pathways that exist as a result of treating the plant

for pest control reasons, and then does it concentrate in the oil? What circumstances does it? Is it just the oil? Is it other parts of the plant that are being consumed or where there's potential for exposure?

So as -- as we're all kind of learning about this, those are all the types of considerations. And, you know, Dan's work at IR-4 and some of the crops that they have a lot of experience with doing field trials might serve as surrogates in the short-term for ways of figuring out where we go from getting some initial exposure information.

Donnie, and then Damon.

MR. TAYLOR: So, Steve, this question is for you and any of the university people that want to speak in as well. I'm interested from your 10-year modeling aspect how many acres do you anticipate needing hemp based upon the growth curve that you're anticipating? Are we talking about a million-acre crop or are we talking about a 72-million acre crop?

MR. BEVAN: That's above my pay grade. Really from our perspective as an individual company and even as an industry, we're all evolving really quickly here. We're trying to figure things out. We want to be helpful and open. And I don't know that

there is an answer. I do know that there will be probably several hundred thousand acres grown this year across the U.S., and that will be an awful lot of hemp for the system and potential use right now.

MR. TAYLOR: Steve, for the value, is it sort of two to five billion range, is that sort of what you're seeing with sort of the projected market?

MR. BEVAN: We've seen a $6 billion figure that one group has put out, and that might seem a little high. But from our internal numbers, that could be pretty reasonable.

MR. TAYLOR: So how many acres do you need to keep -- to supply a production facility?

MR. BEVAN: That depends on how you build it and how you scale it. We're building one that's new and state of the art, but we expect state of the art to change before next year. So I don't mean to be evasive, but I don't know that there's a really great answer to this because we're trying to model what we're doing on some corn drying facilities and what have you. I'll know in November.

MR. TAYLOR: Okay. Well, you're in a government building, so evasive is kind of the name of the game. So another question is based upon the improvement you've seen in genetics just in the short

period of time, do you anticipate genetic improvement increasing the acres or decreasing the acres? Is there a threshold there that we need to keep in mind as we think about registering products?

MR. BEVAN: I think that -- I think that hemp will evolve around the country to meet local and regional needs like other crops, other commodity crops. I think the evolution of the use downstream for that will be initially localized. And I really don't know about the demand pull-through numbers that are going to answer your question. I think when the FDA clarifies where they're at, whether that's six months or two years from now, that will help a lot of the mainstream consumer products retailers decide whether they want to be in the business and put a bid into the -- into it. And that will change everything.

MR. TAYLOR: So from a registration process, our partnership with Canada, is it being useful in this particular question as well? Because I kind of think about canola when I think about this crop. It's very tough to get a canola registration based upon the financial aspects and the use of oil and the food aspects of it. So that kind of comes to mind for me.

MR. MESSINA: Yeah, great question. And I'll say we have reached out to our Canadian brethren for

conversations around this topic because they have experience a little more than, you know, in terms of timing than we do. And they were -- they were helpful. But also they are still on sort of the cutting edge of this as well as we are. So I don't want to say, you know --

MR. TAYLOR: Okay.

MR. BEVAN: Say what?

UNIDENTIFIED MALE: (Inaudible).

MR. BEVAN: Yeah. I think currently they're in the biopesticide field for registrations right now, yeah. But they did put out, I think, some guidance on how they were going to do their risk assessments which I think was another step and helpful starting point.

MR. KEIGWIN: Okay. Damon and then Liza

MR. REABE: So with the four questions, it becomes difficult to answer because, of course, this just became a legal crop five months ago. Right? So I just suggest that the EPA work closely. Clearly, there's universities in Kentucky with staff and experience that's done almost all the research in the United States from what I can gather. And I would think that those would be the experts that you -- you maybe have already reached out to them and this is working -- a work in progress. But in order to begin

the process of registering pesticides to be applied to hemp, those are the experts that you're going to have to go to in order to begin the risk assessment process -- or for the registrants then to decide if they're going to bother with the risk assessment process.

It doesn't seem like from a -- from an applicator's perspective or a user of pesticides the concept that how the hemp is being used does seem very surmountable. So I'll make a fungicide application to corn and it will have a different preharvest interval if it's being raised for grain or for forage. Right?

So it's very common for labels to have the same exact plant species be used for different things. And when I look at these uses, it's likely that many of these uses, much like, for instance, corn, we don't have a pesticide residue tolerance on a corn plant for when it's used to produce ethanol.

So this -- this is an intimidating looking chart, but probably not a mountain of products. Certainly more so than a lot of other plants, but I would imagine this to be a -- able to be considered in the existing process.

MR. KEIGWIN: Yeah. Are folks on the phone unmuted so that if we did want to hear from them, they can chime in? Did -- go ahead.

UNIDENTIFIED MALE: Andrew or Richard or Elisa, but I want to make sure that Liza gets in there.

MR. KEIGWIN: Yes. But did --

MR. THOSTENSON: This is -- this is Andrew Thostenson of North Dakota State in Fargo. I can tell you that NDFU has been doing field-scale trials on hemp now since 2014. So we have a fair amount of assessment work that's going in on the agronomy ad those sorts of things.

As far as any kind of pesticide development work, of course, you know, the IR-4 program at USDA is probably, you know, the best route to obtain some of this residue data so that tolerances can be established. That's going to take a couple of years to accomplish. So whatever pesticides are made available at least, you know, the more conventional pesticides like glyphosate or any number of herbicides or fungicides out there, it's going to take a couple years to generate that data.

And I think that earlier on there was a comment about (inaudible). And canola sort of is our -- a crop that we can look at and say that in the early 1990s, there was next to nothing in terms of pesticides available on that crop. And it took about

five or seven years of production and experimenting and failure and generating the residues to start getting a really -- a good number of legally used pesticides registered for that crop.

Perhaps we can do that a little bit faster with the hemp situation than we did with canola because we've kind of been through it. But I still see that before we get widespread adoption of pesticides on hemp, it's probably going to take five to ten years to really get the information generated to be able to issue the pesticide labels on a wide scale. That's the reality of our -- of our --

UNIDENTIFIED MALE: How much was that data?

MR. THOSTENSON: Pardon?

UNIDENTIFIED MALE: 1300? Yes.

MR. MESSINA: Okay. We can hear you . Keep talking. There's a little background noise. But when we unmute the lines, we unmute everyone on the line. So --

MR. THOSTENSON: Okay. Well, so that's about all I have to add. It's going to take quite some time to make this (inaudible). But at least we do have some experiences with canola in the United States, so that should be helpful.

MR. KEIGWIN: Maybe we should mute the line.

MS. TROSSBACH: There are -- under the 2014 enacted Farm Bill, the research for industrial hemp was allowed. So there are many land grant universities, institutions that are doing research currently. So it's not just Kentucky. Of course, it's North Dakota, Virginia. There are a large number. So there's a lot of that research that's already been done, granted, on industrial hemp.

But I think that that can inform some of these questions and decisions about what type of research has been done. It can be parlayed or the data can be probably bridged, you know, in some of those areas. And so I would really think that the best place to start, while you certainly want to engage industry in the discussions and regulators, et cetera, I think you really have to start back with the research that has gone on to see, you know, what's there.

And, in addition, these land grant universities have done many different types of crops and there may be something very similar. And I think the idea that you look at the food use, assuming that happens there, and the non-food use and can kind of do

that. So I would certainly encourage EPA, and I think it's probably easy to kind of find out which universities have done research and for them to share that university. But I think academia is probably the best place to start.

I'd also offer that there are a handful of products currently registered that list hemp. And so there must have been a risk assessment process for that or some type of work done at some point that may have some base data already there. How that was done, you know, how that was looked at. And so there may also be some stuff that can be used now and can be built upon as opposed to just starting over.

MR. GRAGG: This is Richard Gragg.

MR. KEIGWIN: Yeah, Richard. Go ahead.

MR. GRAGG: Thanks. I do have a couple of questions. So I'm hearing industrial hemp. Does that include medical marijuana?

MR. MESSINA: Well, it -- yeah. So this is Ed. And having sort of looked at this issue, I think the terms have been used interchangeably in a lot of ways. Right? So there's cannabis, the term "cannabis." You know, there's Sativa. There's Indica. There's different forms of cannabis.
There's hemp. There's industrial hemp, agricultural

hemp now.

I would say it's unclear. We know what the definition of hemp is under the Farm Bill, and that's pretty clear.

MR. GRAGG: Right.

MR. MESSINA: But folks tend to use some of these terms interchangeably in speaking about them. So I would say there's no clear answer. But --

MR. GRAGG: Okay.

MR. MESSINA: -- the definition under the Farm Bill includes all the derivatives from the hemp plant. So presumably --

MR. GRAGG: Right. That's what I'm seeing. So --

MS. BENNETT: I'm going to interject for just a second. This Patty Bennett with AMS. I think for us looking at hemp is that we do make a distinction. And so hemp is distinguished from marijuana because of the level of THC.

MR. GRAGG: Yes.

MS. BENNETT: So I wouldn't say hemp and marijuana are -- medical marijuana are the same thing. To me, it's all about the THC level, which is, you know, where we are regulating. That being said, I mean, I think we're also very cognizant that what this

agricultural crop looks like today may not be how we look at it tomorrow or over the next years. But -- and certainly I'm sure there's an evolutionary process that is going to continue to come over the next few years. But right now there is a line in the sand for us and AMS. It's .3 percent THC on a dry matter basis relative to the crop. And outside of that, I have no opinion.

MR. MESSINA: Yeah. So, sorry --

MR. GRAGG: Right. I got -- I got --

MR. MESSINA: I'm sorry if that was confusing on that point. But, yeah, so clearly the difference between cannabis and hemp is clear with the THC content. I thought you were referring to the fact that (inaudible) that are going to have medicinal purposes. And so --

MR. GRAGG: Exactly. I was more -- I may have caused the confusion.

MR. MESSINA: Well, no. Again, I think --

MR. GRAGG: There are medicinal -- there are medicinal -- there are medicinal hemp products. Okay? So -- and so my question -- my first question is, so none of these current products, however they're being used, in the pesticide applications there are no -- at the federal level, are you saying there's no rules and

regulations and that EPA, in conjunction with the FDA, is getting in place to address all of that?

MR. MESSINA: So as my slide indicates, you know, but for a handful of registrations, five or six depending on how you look at it, there are no federally-approved pesticide labels for use on cannabis at all, and there's five that are approved for hemp. At the time they were approved for hemp, the Agency was looking at the uses at the time, which included generally sort of the fiber piece of that.

So now the question you're raising, which is the one we're sort of discussing, is now that hemp products will be used for a multitude of uses, the CBD oils being sort of the -- one of the primary drivers, and the medicinal qualities of some of those, how we go about the risk assessments and the end uses and the studies that are going to be required as sort of the question of the day. Does that answer your -- and working in collaboration with FDA and our other federal partners.

MR. GRAGG: Sure. And Florida A&M University is doing a pilot project on hemp for the state. But my suggestion is that according to your questions, questions for PPDC, I've -- I have a suggestion but I'm sure it's already going to be done. But, you

know, when we make these products and the way they process the products would impact the level of -- or could concentrate the applied pesticides into the final product.

So I'm sure that EPA and FDA know all that. But that would just be my comment in terms of you said are there new or different exposures based on the crop that have not been modeled by EPA. And I'm not aware of what's similar to this type of product for consumption and the way it is -- so this is a product that you could have in oil. You could consume it, digest it, and I guess smoke it, too.

So it's not only how the product is produced or processed, but it's also the administration or delivery of the product to the client and/or patient that would also govern or impact what type of exposure, and, of course, whatever the pesticides are that are going to be eventually allowed or regulated to be used at the federal level.

So would the federal level overtake the state level? Because Florida has current -- for example, has statutes on pesticides in hemp -- pesticide use -- well, they call it medical marijuana. But their medical marijuana is the low THC, is the cannabidiol stuff. So they do have it and they make reference to

some of the federal statutes and Florida statutes, EPA. So my question is -- and maybe somebody said it already. Well, how are you going to look at what the states are doing, those that are out front, how will that fit into the future plans for EPA and FDA?

MR. MESSINA: So two responses to your question. So, yes, we are aware of the -- as you're refining the oils, you may be bringing other stuff along with that. And so that is an area that we need to look at.

On the regulatory front, it is -- we are going to be dealing with the substances that we can regulate that are legal at the federal level. And that is exclusively hemp as approved by the 2018 Farm Bill. The states do have varying positions and laws on cannabis, and in that respect there are differences between the Federal laws and the state laws with regard to that treatment. But we are only going to be focusing on the registration of pesticides on the approved and federally legal hemp products.

Does that answer --

MR. GRAGG: So that -- that is based on the definition you have in the slide. Correct?

MR. MESSINA: Right. That is based on the authority that we've been given through Congress.

MR. GRAGG: Yes, yes. I mean, the definition of hemp and the different products, all the list you have there --

MR. MESSINA: Yes, yes.

MR. GRAGG: -- on the definition according to the statute.

MR. MESSINA: Yes.

MR. GRAGG: So then how are you going to reconcile, or will you or maybe it's just understood? So, for example, the Florida statute says pesticide use on medical marijuana, but then it -- what does it say -- any pesticide used in the production of medical marijuana or low THC cannabis? So will your -- this authority fall or cover the low THC cannabis, or because the title of the statute says medical marijuana then it's not hemp? How would those issues be reconciled?

MR. MESSINA: I will say that we will be addressing -- and as Dr. Bennett pointed out, the distinguishing factor between the legal hemp as allowed by the Farm Bill is the THC content of .3 percent dry weight basis.

MR. GRAGG: Mm-hmm.

MR. MESSINA: That is where the federal space will be regulating. The states, on their own, have

regulated in the space where they have at the state level approved medical marijuana or, you know, cannabis production at a different THC level. But that is different from the federal requirements. Does that --

MR. GRAGG: Okay. Thank you.

MR. MESSINA: And if you'd like to talk offline about some of the wonderful things that flow from that, we can have a long and wonderful discussion. I'm happy to have that with you.

MR. GRAGG: All right. Thank you.

MR. MESSINA: Okay.

MR. KEIGWIN: All right. So Eric had his card up real quick. So Eric and then Jim, and then I think -- because we've hit our --

UNIDENTIFIED MALE: 3:01, yep.

MR. KEIGWIN: 3:01. But go ahead.

ERIC: So first I want to say thank you to Liza for the earlier segue. The Tribal Pesticide Program Council's concerns regarding pesticide regulation are exactly aligned with AAPCO's in terms of FIFRA, particularly in terms of cooperative agreement grants and FIFRA.

So the next thing I had was I don't have anything on my desk right now on marijuana or hemp,

but I do have a recent question from the Range Management Department on the Colville Reservation about a grower who wanted to spray for rush skeletonweed and there were tribal members that also gather bitterroot in that area, and bitterroot has been gathered forever by tribes and long before white settlers. So I don't know if the PPDC has done some work with EPA as far as models go. So I don't know if there's anything applicable there. But I'm just throwing that out there.

And, lastly, how do you assess compliance on that line in the sand? How do you -- do you contact growers and ask -- are there cultivars that contain higher or lower levels? How do you -- how do you work with that?

MS. BENNETT: So right, now it's hard to know exactly how this is going to look because we haven't -- we haven't seen the final regulations. But we believe that the statute is telling, saying that before product can be moved into market it needs to be tested. And so if it exceeds that limit, then -- and I think Ed mentioned this, you know, or somebody -- Liza maybe said that -- yes, Liza did, talked about that disposal needs to occur whether the states or the tribal nations will oversee it, if they have their

plans or if USDA is going to oversee it, if it's an individual grower.

So -- but, again, you know, the issue for so many, the conversation today is if it is under .3, once it goes past and whether it's compounded and mixed and all this other kind of stuff, I mean, it really -- it's no longer right now with AMS jurisdiction and it's going to fall to whether it's EPA, FDA, you know, again, states, tribal nations, in fact, of determining further testing.

And I know that other states have talked to us, and I think Kentucky did, too, that they have licensing in place for their processors and there's further testing down the road, down the line. So as products move through the system to become the end product, that some states have already put into place what level of testing as it goes down that lane.

And, again, I don't know that tribal nations have said that to me. It's not that they necessarily aren't doing it. I just know that some states have said that they're -- you know, that they continue to regulate until the final -- the final product. So --

MR. MESSINA: Thanks. Tim?

MR. TUCKER: Thank you. I'd just like to say I think with the no-chemistry thing that Scott was

mentioning, and no USDA funding for research and no minimum tolerance levels, I've kind of decided whether I'm going to be using CBD oil or not. But I was -- I guess this is a question for Charlotte primarily. Are minimum tolerance levels established after registration, the process is complete, or does that happen before? If we're talking about new products, you know, not existing products, but if there's new products that come on the market, are they established after registration or before?

MR. KEIGWIN: Yes. So that's -- so FDA does enforcement of the tolerances, but EPA establishes the tolerances.

MR. TUCKER: Okay.

MR. KEIGWIN: So for food products, we establish the tolerance at the same time that we issue the registration.

MR. TUCKER: Okay.

MR. MESSINA: Okay. Well, thank you all and thanks to all the members of the panel for a very lively, engaging discussion. I think we all learned a lot and there will be a lot more for us to learn. So thanks again.

We are now at 3:05, 3:06. So let's come back at 3:20. Thanks.

(Brief recess.)

MR. KEIGWIN: -- aerial vehicles. And Ed Messina is going to lead us through this session --

(Recording malfunction.)

MR. MESSINA: Okay. Welcome back. Similar -- it stopped working. All right. Hopefully that's not a sign. I'm here to talk about innovative technology while the technology breaks.

So this is a followup to our conversation we had in October where we introduced this concept. And there's been some but not a lot of progress, mainly conversations with folks. And, again, trying to get educated on this topic. We've got a number of speakers that we're going to hear from today.

So first on our panel, we have -- is Rose calling in and is she available? Do we know yet, on the phone? Are you checking?

MS. JEWELL: Rose is -- she should be online.

MR. MESSINA: Great. Okay. Rose, are you there?

MS. KACHADOORIAN: This is Rose Kachadoorian. Can you hear me?

MR. KEIGWIN: We also have a conference call.

MR. MESSINA: So others that are participating on the line, if you could mute your line briefly.

Otherwise we're going to have to turn it down.

MS. KACHADOORIAN: Yeah. I'm just going to be (inaudible).

MR. MESSINA: All right. So we will mute the background and be talking to Rose. All right. So Rose is the president of AAPCO and the co-chair of AAPCO's Pollinator Protection Workgroup. She was a member of the PPDC Pollinator Metrics workgroup and was a two-term member of the SFIREG Pesticide Operations and Management Committee. And she has been with the Oregon Department of Agriculture for over 20 years and oversees efforts involving pesticide registrations, applicator certification and licensing, pollinators endangered species, the worker protection standard and pesticide-related water quality issues.

And then we have Mr. Joel Buettner from the West Coast mosquito and vector control stakeholder perspective from Placer County Mosquito and Vector Control in Roseville, California. Joel is the general manager of the -- is it Placer or Placker, anyone from -- Placker? Okay. Placer Mosquito and Vector Control District, northeast of Sacramento, California, and is currently -- currently serves as the chair of the UAS Subcommittee for the American Mosquito Control Association.

Joel holds a master's degree in integrated pest management from the University of California Davis and a bachelor's of science degree in biology from the University of Washington. And his professional interests include promoting innovating -- innovation through the use of technology and protecting public health from risks of vector and vector-born diseases.

We have Lee County, Florida, Mr. Ed Foley, from the Lee County, Florida, Mosquito Control District. Ed is the manager of the mosquito control with Lee County Mosquito Control District and is currently completing a master's of science program in environmental science from Florida Gulf Coast University. He has five years of operational experience in public health mosquito control and he currently oversees all of Lee County Mosquito Control District's operations, which include ground and aerial-based treatments with both larvicides and adulticides.

And we have Lee County Hyacinth Control, Mr. Kevin Watts. Kevin is the Deputy Director for Lee County Hyacinth Control District and has 24 years of experience in Florida aquatic weed control. He earned his bachelor's degree in environmental studies from

Florida Gulf Coast University.

And then we have our very own Damon Reaby, National Agricultural Aviation Association. And Damon owns and operates two aerial application companies in Wisconsin. His companies operate nine aircraft consisting of both fixed wing and helicopters. Damon serves on the National Agricultural Aviation Association Board of Directors, the Government Relations Committee Chairman for the NAAA, and the Chairman of the NAAA Ad Hoc Committee providing expertise on the subject of spray drift risk assessments to both EPA and USDA. He's a member of the Professional Aerial Applicator Support System Development Committee and is a PAASS program presenter.

Damon is also an active aerial applicator himself, operating aerial application airplanes and helicopters approximately 700 in-flight hours per year. And Damon lives in Wisconsin, who we all know.

So with that, I'm going to do as we did the last time. I'm going to do a little bit of setup of where we've been as an Agency on this, you know, recently since October. I'll talk about some potential PPDC questions for setup, and then kick it over to our speakers to hear from some great speakers

and topics.

So, with that, let's see, this is working. Okay. So, you know, at the last PPDC I talked a little bit about how -- and from my perspective, you know, UAVs sit within the space of emerging technologies. And how emerging technologies, precision farming and the like are influencing the way pesticides are being used, which influences and provides a need for EPA to understand how these new technologies are going to change the way they're being used and the extent to which, as we're reviewing registrations or doing re-registrations, if these new tools are available can we then, as we're doing our registration of you, take them into account and how do they change our risk assessments.

And so UAVs are sort of an example of that, I would say, innovative technology that we have. Many different types of UAVs from your store-bought, over-the-counter to your full scale certified helicopter, you've got many different types which creates use scenario issues. Right? So you've got the single rotor; you've got quad copter; you've got 12-rotor systems. They can be anywhere from, you know, as big as sort of your laptop to as wide as the conference room table here and carrying varying degrees of

payloads and varying degrees of airflow coming off the rotors as you're spraying the pesticides, different sort of applications and uses.

So, you know, with regard to UAVs, we do receive questions from this industry that's interested in expanding into different uses regarding, you know, what our position has been on UAVs, how to apply pesticides in compliance with product labels and how to ensure label compliance as they're using UAVs to apply pesticides; also seeking regulatory approval and coordination with the FAA.

And then for registrants, the need for guidance for appropriating UAV products for aerial application, and then states sort of understanding the lay of the land in terms of how UAVs are being used and how pesticides are being used to -- through UAV application.

There's a number of potential benefits. There's also a number of potential risks, which, as an Agency, we are frequently called on to balance. There is a potential reduction in worker exposure. The ability to do targeted applications using GPS, precision GPS and geofencing where you can have the UAV be applying closer to the canopy and at a particular sort of fenceline distance and marking off

areas where you don't want that precision device to be going.

And then on the safety side, it's smaller payloads. So maybe you have frequent filling and loading from worker exposure, so how does that work? You have smaller payloads. You potentially have nozzle size differences. You have difference from rotor washes. So how do we -- and there's, as I mentioned, a myriad of shapes and sizes for these technologies and how do we account for all the varying different degrees of those applications.

This next slide talks a little bit about some of the things we've been looking at for the benefits of UAVs. In high altitude areas or really sharp terrain where you may not want to send, you know, a pilot into, it creates, you know, certain ability to have beneficial safety. There's a number of applications for controlling weeds on cliffs where they're, you know, shooting the little pellets at the cliff and sort of the paintball application, which is less than precise.

And so, you know, if the UAV can get up there right at the hillside and apply a pesticide, you're actually doing it in a more precise manner. Potential to be faster and less expensive than traditional

aerial applications. Right now, there are commercial applications and we're going to hear from some folks that are using them where they are cost-effective. And so as the price of these new technologies decreases, as it happens over time, you're going to see new and greater expansion of this potential application.

I mentioned potentially less worker exposure. So you could have smaller tank sizes and more frequent loading, but you can also have an automated system where the UAV just docks and gets its payload and then it's done automatically and it's a closed system and then takes off. And so you could have scenarios where there's actually less worker exposure as a result of using this new technology.

Potential increase in safety for pilots in difficult terrain areas. Using this application where you might not otherwise be able to use airplanes. We saw -- in October we had a presentation, and they're in the notes and the transcript where we had somebody who was using UAVs for forestry applications in really hilly areas out west where they were actually doing the seed and the spraying on hillsides where it was really hard to get planes and helicopters in very tree-lined areas. So that was a commercial

application that was being used.

I mentioned applications being made closer to the canopy, which has the potential, again, to reduce spray drift. But all the other factors involved contribute to spray drift, and so that needs to be analyzed, the rotor and the nozzle size.

Spot or partial field applications become more viable. And then this is an interesting one. Sort of nighttime application. So as we talk about pollinator protection and we want to encourage labels, and let's say there's a label that is impacting pollinators and we -- rather than, let's say, for example, hypothetically, we'd need to off label certain applications when we do our registration review, if we're able to retain that application because we can say, you know what, apply at night and that's going to reduce the exposure to bees, and we retain the ability for that tool in the tool box for the grower and this technology helps with that nighttime application because the UAVs don't necessarily need to see at night. You know, you've got thermal applications.

And I know that some of the mosquito control district folks are actually using night. When they spray at night, they're using night vision. But does

this technology, in fact, enable us to have better pollinator protection?

So sort of encouraging or saying, you know what, you can only spray this at night and now there's a way for farmers to do that.

Some of the potential -- wait. Did it turn? There we go. So, you know, some of the questions we've been presented with and we've talked about this in October, labels currently where they say aerial application, does that mean UAVs?

At the time that we did the assessment, UAVs weren't here. We were looking at helicopter rotor wings and we were looking at airplanes, and we were looking at boom length and we were looking at model downwash. So is it -- is it a -- you know, do -- does aerial application include UAVs?

There has been some preliminary guidance out there in the form of conversations with folks and emails saying that the Agency does consider it. But is that sort of the most official statement that we want to have and should we really analyze in more depth sort of what the current practice is in terms of allowing UAVs to come under the aerial application definitions in the labels, and is that the right approach.

FIFRA labeling compliance issues with UAV applications. We talked last time about boom length being an issue. The boom length, some of the requirements on the labels are linked to the rotor width. And so because these UAVs have varying different rotor widths, the boom length metrics or calculations you need to do sometimes don't line up with the physical aircraft in terms of how you calculate that. And we know that the label is the law.

So how do we -- how do we enable UAVs to sort of comply with that provision? So there's been certain compliance issues that in conversations with the UAV folks, you know, how do we comply with this particular label provision when it wasn't necessarily contemplating UAV use when we approved aerial application.

I talked about sort of the uncertainties in the modeling and assessments; what are data needs for these systems. What are the Agency policies that we need to put out there to really provide some certainty.

You know, there's the UAV industry where we certainly don't want to discourage its growth, but there's also the level playing field approach or the

fixed wing folks who are doing and done all the studies and doing it, you know, and complying with the labels in a way that we want them to. And so we appreciate the level playing field issues here with regard to UAVs and the fixed wing folks, and the helicopters.

Who's the operator of the UAV? When you've got maybe five people out there in the field and, you know, with the FAA opening up the ability to use pesticides through UAVs and the training and the different requirements you need to take, you know, we -- you have the pilot's license. You have the 173 or the 127 forms for hazardous applications for FAA. Who is the operator for certification training, for worker protection issues when there is various folks doing different roles? Right?

There's the guy driving the UAV; there's the person maybe applying the pesticide; there's the person with the kill switch. So there's multiple operators associated with these particular technologies.

I talked a little bit about drift and the potential benefits -- drift reduction benefits and also potentially some of the different types can potentially be increasing drift and how do we analyze

that?

And then this technology is constantly changing, as is any new technology and how do we account for, you know, all of a sudden we've got the 14-wing propeller UAV that's out there and that carries, you know, a ton of payload or, you know, it just -- it keeps changing almost every day and how do we keep up with that.

So since October and a little bit before, we've been having conversations with lots of folks. We've been doing some fact-finding here. We've talked to FAA. We've -- since October 2017, we had a workgroup on UAVs where we're trying to have internal conversations. Our PPDC October meeting, our SFIREG meetings. I recently spoke at AAPCO where we had a panel with FAA, with various folks from different associations and folks that represent the UAVs and the folks that represent the fixed-wing folks and some of the modelers that are in the states trying to do some of the modeling for these aircraft and nozzle types and different sort of wind flows. And then, you know, the regions in the states interested in this topic as well.

So these are -- as we've identified for the Agency -- some potential next steps. And we'd sort of

throw these out there for consideration in addition to the last slide of my presentation, which is sort of questions to consider as we hear the speakers.

I think it's incumbent on us to really -- and we have been thinking hard about what does our policy document look like for UAVs. You know, what statements do we immediately need to put out there in more of an official capacity to understand and appreciate the level playing field issues and also encouraging the use of technology.

Addressing label interpretation concerns. Again, the boom length and rotor specifications. What are the data gaps and sort of trying to get a handle on those. Understanding the scope of the products and use patterns similar to our last discussion. Developing regulatory structure and parallel with FAA, which aligns with Agency-wide policies. Creating an OPP strategy that coincides with the evolution of UAV technology as opposed to hindering it. You know, sort of making sure that we're doing things to encourage this use as an available tool for growers where folks want to use them.

And then issue Agency guidance policies outlining acceptable UAV use patterns that covers labeling, regulatory issues, safety issues and any

enforcement issues. And then, again, any other suggestions that folks want to put up there.

The last slide is questions to contemplate as we're hearing from our next speakers. And we've got -- in view of the -- in the view of PPDC, what are the important trends and developments regarding UAV technology that EPA needs to understand. What does the PPDC believe are the most viable ways for EPA to both account for in terms of chemical exposure and risk assessments, and also support in terms of serving user needs the adoption of UAV technology.

What data sources are PPDC members aware of that can assist EPA in developing appropriate risk assessments and regulatory positions for UAVs?

So, with that, I'm going to see if we can get Rose on the phone and tie her in for her presentation. Rose, are you there?

MS. KACHADOORIAN: Yes, I am. I am. There's a lot of noise. So I already -- oh. Oh, gosh. I'll let Liza Fleeson give this and that way you won't have this unmuted, if --

MR. KEIGWIN: Give us a second to work out the technical issue.

MS. KACHADOORIAN: Okay.

MR. KEIGWIN: We might be able to solve it.

Is your mic on?

(Brief pause.)

MS. JEWELL: Rose, can you hear me?

MS. KACHADOORIAN: Yes, I can. There's an interesting noise there.

MR. KEIGWIN: I think it's working. So why don't you give it a try.

MS. KACHADOORIAN: Okay. All right. Well, you know, Ed, you covered some really interesting areas that I'm going to also be touching on. So I think that was really great. I'm going to, I think, move just to slide two, and I think most people there are familiar with AAPCO, an organization composed mostly of state lead agencies.

And, you know, a couple of things we do is we register pesticides. We enforce label language and other laws. We have various committees and workgroups. And recently there was a lot of discussion as far as coordination with the U.S. EPA around UAVs and other forms of technology.

What we were having is a lot of, you know, various states contacting different people at EPA and not -- not necessarily having it as coordinated as it should be, and certainly we were giving a lot of presentations at SFIREG and AAPCO, which was useful.

But I think it really highlighted that we needed to have maybe a little bit more formal structure.

Slide three. So part of the mission of the new AAPCO technology workgroup would be to work with various technologies and to really learn about what they're doing. There was a lot of questions. At this point, their focus is going to be application equipment and how that relates to label interpretation and compliance and who is technically the applicator, as Ed brought up, and really ultimately who's responsible.

We're starting with UAVs because that's where most of the questions are coming from. But what we foresee in the future is we are hearing talk about robots and a lot about micro-rate dispensers and also artificial intelligence where you might not even have a human being making that decision; that you could have basically a piece of machinery going down a field not only just deciding what weeds to clip but also what weeds to spray. So who is really the applicator there and other issues and how does that relate to what's on the label.

So slide three. And, you know, Ed brought this up as far as who's the applicator. This was our situation here in Oregon where we had envisioned that

it would be just one person flying this drone, but instead we would have four, five people out there each having a little piece of what was going on. And so we questioned what do we do with licensing, who has to wear what PPE.

Slide five. And so one of the things that we're anticipating the technology workgroup doing is to develop a guidance; work with EPA and I know that they're developing a policy guidance. But we would have one that was set up more for state lead agencies. And so they would be working together.

One would be like, for example, PPE. So you have somebody who is basically typing away on a keyboard and they're technically an applicator. And we have a requirement for thick gloves, or you have somebody holding a remote controller and there's some PPE requirement. What does somebody -- when you have a pesticide inspector go out there, how do they look at that situation?

They're looking at a pesticide label that has certain requirements on it, but yet these people who are technically applicators aren't wearing them because it's just not physically possible, and, again, other label requirements that might be there. Ed mentioned the nozzle situation, as far as the boom

length, all of those, how that might be worked out in a guidance document.

Slide six. Some of the questions we've been receiving is actually WPS-related and it has to do with the application exclusion zone. If somebody is making an aerial application using a UAV, are they following the 100-foot for aerial or are they following a 25-foot for ground application?

Also, sometimes we have pesticide labels with buffer requirements next to waterways. What buffer requirement does the applicator of a UAV follow? And we're really thinking is this some kind of hybrid method that, you know, we don't have the data to support either direction. And I think that's what Ed touched on there as far as the need for data.

But we're in a position right now that, you know, we have these applications going on now and we have inspectors asking us, well, what -- what do I do; what am I supposed to be following? So we're hoping that we can maybe speed things along to help the people who are actually in the field be able to provide some kind of guidance to the applicators, and also us as managers to let our inspectors know what we expect of them.

Slide seven. So basically we have a lot more

questions right now than we have answers. We're still setting up our first meeting, though. But one of the questions that has been posed to us is FIFRA 2(ee) applicable? Part of FIFRA 2(ee) indicates that any method of application is -- if it's not prohibited by the labeling, that they could use that.

So how does that fit in with this situation? And then somebody brought up, well, there is this kind of almost exception to that 2(ee) and that has to do with some information, some standards indicated in the pesticide registration notice 87-1. This is from, like, 1987 when EPA decided that to protect water quality that they needed to have additional information; if this was going to be an application method, that there had to be additional restrictions and directions on the pesticide label.

So are we going to see something like this eventually out of EPA, I think we could all agree it might be a little premature at this point. We're still learning information, but is that something that we might end up seeing.

Also, states have asked, well, do we -- what data do we even need? If we have a UAV operator come to us and say, well, this label only allows ground application or only allows application by helicopter

or fixed-wing airplane, what information would a state need to grant a 24(c).

So hopefully that workgroup would collect all of that information, coordinate comments with the U.S. EPA and then provide the information back to the state lead agencies.

So to kind of wrap this up, really their mission will be coordination; to learn about new technologies, also; to identify potential issues, and that also the solutions because I think we can all come up with a lot of issues. But then to come up with a solution sometimes is a little bit more difficult; work with EPA, work with SFIREG and its working committees, and then develop some kind of guidance for the state lead Agency.

So then I'm onto my last slide. Sorry I moved ahead there and didn't tell you. So that's all I have about our new AAPCO technology workgroup. It's -- you know, we haven't met yet, but we have done some discussions about this and hope to have more for you in the future. Thank you.

MR. MESSINA: Thank you, Rose. And we are looking forward to interacting with the AAPCO technology workgroup. I think it's great that it's been set up and we'll have our folks reaching out to

you guys. So thank you. And we've already sort of had some initial conversations about how to get together.

So, with that, I'll kick it over to Joel. Joel, are you on the phone?

MR. BUETTNER: Hello. Can you hear me?

MR. MESSINA: Yes, thank you.

MR. BUETTNER: Great. Thank you. Thanks so much for the opportunity to present. I am -- like I was introduced, I work in Placer County in Northern California, and we've been working with drone technology, small unmanned aerial systems since about 2016.

This is a map of our district. We have really varied terrain from the flat lands to the west all the way up to the north portion of Lake Tahoe. So we were looking at this technology and really interested in its ability to access difficult-to-access areas; potential for improvement in performance of our field technicians, and also some worker safety issues in terms of they don't -- you know, we don't have to have people go out on snowshoes, which does happen.

Just a little background on what we do. We have what we consider a comprehensive mosquito and

mosquito-borne disease program that's based on surveillance. So we do a lot of activities to gather the data to inform or treatment decisions. So this is trapping both adults and larval detection. We have an onsite lab. We do disease testing. And basically this generates a bunch of data.

And I'll come back to this later in the talk, but I think while we're talking about the unmanned aerial vehicles there's associated technological developments that are very important here. This is some data analysis. This is a real-time data dashboard. It helps us when and where we can apply this new technology drone.

So, you know, these things kind of go hand in hand, and I think that's something that's sometimes overlooked when we're just focusing on the flying thing in the air.

With that said, we are very focused on having good data, having science-based decision-making, to inform our treatment decisions. And I'll get more into that in a moment.

And then finally over here on the west coast, we are definitely driven by West Nile risk and other vector-borne disease risks. So that kind of helps direct where these applications might happen.

Okay. Our mosquito control toolbox. So (inaudible). But the ones that most avail themselves of UAVs, obviously larviciding and then adulticiding. I would say that's inclusive of finding when and where to apply.

So that's kind of where we started back in late 2016. We got this small DJI Phantom IV UAS and just tried to answer the question, can we see where the water is? Can we get a better perspective and better targeting both in time and space of where we need to do preventative mosquito control?

That launched into a lot of interest from our staff. We did some training. We built up our infrastructure in terms of safety plans and protocols, testing protocols, how do we even just fly these things around safely. That evolved into some other mission types. And all of this is not related to pesticide applications (inaudible).

We actually did a project where we landed a waterproof drone on water to detect mosquito larvae. And over a couple of years, we finally got to this drone here on the right, which is the one that we are using to apply (inaudible) water. So -- and that's what we're talking about today.

So really this is a list of those mission

types. It was quite a process and I think at least for us it was very important to have gone through this test. We have a better idea of how to safely operate and integrate UAS technology in our (inaudible).

And I don't think our guys or us as managers are really -- would be in the -- have the same level of -- we wouldn't be as comfortable -- same level of comfort jumping into pesticide applications had we not gone through these other steps.

Okay. There was some mention earlier -- earlier talks about the application regulations. And I'll just quickly review them. Back in 2012 with the FAA Reorganization Act, the FAA called somewhat automated flying things aircraft. So UAFs are aircraft according to the FAA, and we have to follow those rules.

What we're using is we chose to operate our pesticide applications under the civil portion of the FAA rules, Part 107, which is the small UAFs rule, and Part 137, which regulates pesticide application. This is how most commercial operators would probably approach FAA regulation compliance at this time. There's some other options. There's Part 333 Exemptions for those who want to fly and apply with UAFs that are larger than 55 pounds fully loaded. And

then some agencies also -- well, public agencies can operate under a public aircraft certificate of authorization.

I won't get too much into this, but for the purposes of our district we're operating in this area right now. So I think there'd be some applicability to ag uses and other commercial uses.

On the pesticide application side, certainly from our perspective as an operator on the ground we have to comply with our state pesticide applicator certification. We do that through our Department of Public Health in California as vector control technicians. We also have -- we have to comply with our state aerial application certification which is above and beyond the FAA. And in California, we actually had to get some legislation changed slightly to allow unmanned aircraft pilots to do this. We're currently awaiting the final release of those regulations and the tests and so forth sometime later this summer.

And then finally as it's been mentioned, product labels. In mosquito control, especially with mosquito larvicides, which I'll get more into in a moment, we feel that the labels are -- work pretty well. Our labels tend to be fairly low volume. The

materials like BCI, which is a biological that's very specific to mosquitos and flies and other relatives, have very low nontarget impacts. So we feel pretty comfortable that at this point in the evolution of unmanned aircraft application it's a good match. And we're moving forward with that. And hopefully that can be helpful to others coming behind us.

These are just some pictures of our 137 exam day with the FAA. These are -- the guys in the green vests are our staff at the district, and the other folks are from the FAA and we're describing our operations and how we would operate a larvicide application in the field. You'll notice that we had to figure out, like, where do you put a container label on a drone? So we actually had to create this little placard to do that.

I'll just mention all this is water. So we're -- we're faking it. But I think it's important, again, that we've gone through this process and developed these procedures so that when we are ready to use live product, we're able to.

So, you know, in our daily operations, we use lots of different spray equipment from backpacks to, you know, ATV-mounted sprayers, to full-blown airplanes and boats and things like that. So really

just taking a look at this new type of sprayer and applying the same sorts of safety and mixing and handling protocols made a lot of sense.

There were a few things that we had to -- we ran into, like to drain this, it's hard to do it on the ground and it's got rotors and things sticking off of it. So we had to elevate it and we had a stand on a table that makes it a lot easier to handle. So these sorts of things just kind of come with experience working with the equipment.

Okay. So let's get into the pesticide application itself. What we're doing -- and we're planning to go into full operation later this summer -- is a mosquito larviciding. So for those of you who don't know, we're applying a material on the surface of the water that these mosquito larvae will ingest and then they will die and not become adult mosquitoes, which are the public health risk stage of the mosquito.

This is an example of one of our test flights. So this is our flight crew doing preflight checks both for the aircraft and for the pesticide, mixing and loading. And this is actually an autonomous flight. And this means that there is someone holding the controls but they're not actually

flying it. They have preprogrammed a target area which is this wetland area, and programmed the rate and the flow and the swath width and all the rest and then basically hit go now and the -- the aircraft goes and flies a pattern. It's very, very safe. It's kind of -- you know, it's almost boring because you're not really doing anything other than watching and being ready to take over if something happens.

In over about 120 test flights that we've done, we've had no issues with the loss of control. And this is a very kind of characteristic type of habitat that we would be operating in. So you can see kind of the benefits -- sorry about that. But you can see the benefits of -- the alternative is to drive in there with an amphibious vehicle, have people -- a bunch of people put on waders and go walk through that to control mosquitoes. Using the UAV really has benefits in efficacy and safety from -- I think from a worker standpoint and from an environmental standpoint. I think, you know, repeated driving through wetlands is something that we want to avoid.

But in order to do all that effectively, we need to know more. And, again, I heard a lot about we need more data. We're here trying to collect that, again, by applying the sorts of processes and data

collection techniques that we use on other spray systems like a standard swath width, droplet characterization that you do with a manned aircraft, we're doing with our unmanned aircraft. And we're getting some good -- good results. Again, there's nothing really to compare it to.

Just a little aside, this is -- these are screen shots from a DJI. So this is a company that makes the -- makes the UAV. It's their droplet reader. So we're kind of evaluating their other techniques, your other devices that can be used. This works okay. There's some limitations. But it works (inaudible) droplets. Obviously we're trying to understand effective swath widths and get some of that basic data that doesn't exist for some of these devices.

Moving on, the other type of spraying that we are not currently doing as a district but would like to in the future, we think this is going to be a more difficult operation to pull off. But eventually I think we can do it, is actually applying mosquito adulticides. So while the other one, larvicides, we're applying to water that's analogous to, like, an agricultural spray, an adulticide treatment is trying to impact flying mosquitoes in the air. So they're --

it's a very ultra-low volume application to a space of air, you know, over a target area. And typically this is done now by ground or manned aircraft over relatively large areas.

We think there's a good niche for the UAV that we can hit kind of those small to medium-size areas maybe with a little bit better efficacy in our treatments and maybe even be able to use less products -- less product in an area because we're being more effective at getting the mosquitoes that we need to.

On that note, one of our first missions actually was to try to investigate how our treatments are working and also how to evaluate our atmospheric conditions right up to a manned mosquito adulticide mission by measuring the near ground temperature inversion. We did that with our first drone. So this is -- this is the drone right here. This is how we normally do it with just a 30-foot pole next to the truck with a wind meter.

We were able to actually fly this drone up and down -- we did it before, during -- not during, but before and after a manned aircraft application and got some really interesting data that hopefully will be able to help inform us on when we should go, when

the best time is to fly, and even more importantly when is it a good time to fly because not only would we be, you know, wasting the opportunity of controlling mosquitoes, it's costly and, you know, we don't want to be using products when they're not being useful.

So this basically shows that there's kind of stable air here. This is altitude and this is temperature and the colors are the different runs that we did. So, again, still a little bit rough around the edges. We're not sure how this works exactly. But it's very easy to get this type of data with UAV technology.

Another application of technology, not the unmanned vehicle variety, but this is one of those accessory technologies. This is an auto-counting mosquito trap that we were able to use to detect the impact of a ULV adulticide from a truck on mosquito activity.

So very quickly the blue line is the day before, the -- this is timed in 15-minute increments. So lots of mosquitoes flying at this time the day before. The day of application, they tapered off, and the day after application they stayed down.

This is very -- seems very simple. But it's

incredibly difficult to gather this type of data without some sort of technological assistance. So I think from this I would like to point out that a UAV adulticide mission would be somewhere between a manned aircraft mission and a truck mission.

And this speaks a little bit to the point I believe Ed brought up earlier, is, you know, while the FAA considers unmanned aerial vehicles aircraft, from a pesticide application, because we can release at different heights and go different speeds, we have a lot more ability to fine-tune our application parameters. We can make it kind of behave in a way that is different than our more traditional manner.

So I think we could probably pull off something that looks like a truck ground-based adulticide more easily with a drone than with like a manned aircraft just because of scale.

Okay. Just wrapping up here, the process that we are working with and will continue to work with to evaluate this technology for the use in mosquito control is we want to start with emulating our traditional applications and methods. So to do that sometimes we have to understand our traditional application is a little bit better; figure out ways to measure efficacy, measure droplets if that's

important, or conditions such as wind, wind speed. That all falls into number one.

The second one is to identify what application capabilities for each UAS and associated application system. What we mean by that is, you know, in looking at a number of different types of UAVs and spray systems, you've really got to look at them together. And I know Ed mentioned quite a few different configurations of UAVs. Just at this point, I'm not convinced that all of them are going to be good choices for spray system platforms. But some of them might be. And I don't know that anyone really knows which is which at this point.

Pardon me if someone does. I'd love to talk to you. But at this point with what's available on the market, it seems to me like there's really -- each UAS spray system combination is good at doing what it does and trying to do everything with one type of aircraft is probably not realistic at this point.

We want to -- so evaluate those. We are going to then use them to try to manage mosquitoes in new places. So, again, that puts it back on us to find out -- to figure out, you know, what are some new targets that this technology allows us to access to control mosquitoes that we weren't -- that weren't

available before with traditional methods. So can we -- can we really know when, you know, mosquitoes just emerge or when they're old or when they're sitting in (inaudible). Those sorts of things kind of open up -- you know, that opens up our ability to really investigate some of those with this new technology.

And then finally we -- they need to be effective and efficient. Every time I've talked to folks about what we're doing with the UAVs, everyone lights up, is super excited and, you know, that's super cool, that cool factor of, you know, flying machines is great. But it can be also a distraction.

So, you know, really once we've gotten down into doing operational spray applications with the drone in the field, it's pretty boring. And I think that's the way it ought to be. We shouldn't be super excited, shouldn't be super fast and flashy. You know, this is something that is very efficient. It works well. You have to -- there's risks and benefits like was discussed earlier, but once we're up and running, I think it's going to become fairly evident that this is just another piece of equipment, another sprayer that's going to perform a job that we -- that we have it do.

Okay. In closing, just to reiterate a couple

of points that I've said already, this is -- I think UAS applications are here. And in terms of mosquito control programs and our mosquito control program in particular, it's going to be really important. We can do things with this equipment that we can't or is really, really hard with other equipment or really cost-prohibitive or people-prohibitive in terms of the amount of manpower that it takes.

Complimentary technologies are super-important and we'll continue to work with those. Mosquito larviciding and adulticide applications need those specific equipment configurations. And I think that's an area of research that needs to be taken on by the drone or the UAV community. And, you know, whether it's, you know, better modeling for, you know, how the air flow affects sprays or any number of other questions that may be for this to really kind of set up, I think we need to tackle that one.

Mosquito control product labels I think are good right now. But I can quickly see how some of these labeling issues might be -- might become an issue. And I for one do have a -- have an appointment with our county ag inspector to come out and actually look at one of our spray applications before we go fully operational with them and maybe we can answer

some of those questions that were raised earlier.

And then finally I think we do need to be proactive, and I commend this group and the work for the EPA, working with the FAA, to really try to understand all the different challenges and questions that are going to arise and have arisen regarding these applications. And we're certainly very excited and available here to help with input and answer questions and share our experience the best that we can. Thanks very much.

MR. KEIGWIN: Thank you, Joel, for a great presentation.

With that, we'll move on to Ed. Ed, are you on the line? Ed Foley.

MR. FOLEY: Hello, I'm here.

MR. KEIGWIN: Great. We can hear you. We're adjusting the slides, so give us one second.

(Brief pause.)

MR. KEIGWIN: Okay. Ed, you should be in control of the slides.

MR. FOLEY: All right. Looks good from my end. Do you look good on your end? Does it look all right?

MR. KEIGWIN: Yep, we're good.

MR. FOLEY: All righty. Thank you very much

for that. So, again, my name is Ed Foley. I'm the manager of mosquito control here for Lee County -- Lee County Mosquito Control. My background has to do more with the operational side of the house, more of the hands-on larviciding and some of the adulticiding work.

I am actually joined by our special projects manager, Rita Maiss. She has about eight years of experience as being a pilot with Lee County Mosquito Control. She's dual rated for helicopter and fixed wing, and she has plenty more pilot background history among that.

So what I have in store has more to do with the operations, and any questions, I'm sure she can kind of help me out with that.

Okay. So a little bit of background about Lee County for those who may not know. We're down along Florida's Gulf Coast down in Southwest, Florida. Lee County Mosquito Control is a little bit unique. We have quite a bit of salt marsh. We have over 56,000 acres of salt marsh habitat, very little of which is actually managed for mosquito control through the use of impoundment. So a lot of what we do is more of a reactive based on tide and rainfall events in the summertime. So we stay quite busy. We're

actually established in 1958. So we've been around a little while.

Here we go. Like Joel mentioned, you know, larviciding, the act of actually targeting mosquito larvae or mosquitoes when they're in their juvenile states when they're in the water, a lot of what we do is very much an aerial-based program here at Lee County. Because we are so reactive and have so much mosquito breeding habitat, we actually operate a fleet of six AirBus H125s. So a lot of what we're doing through the summertime, through the mosquito season like I call it, has to do with inspectors going out, surveillancing hard-to-reach areas by helicopter, finding mosquito larvae and being reactive and turning around and spraying it and getting them kind of controlled.

So we have liquid and granular capabilities with our aircraft. And like I said, the larviciding side of things, these are the hard to reach -- hard-to-get-to areas. Now, we do have a ground operation here. We have six ground larviciding trucks, six field inspectors that go out daily. And the majority of what they're doing is going to the neighborhoods and roadways and ditches and that kind of area. So more urbanized than anything.

And then our adulticiding program, we do have 13 ground adulticiding vehicles. These go out on an as-needed basis. So we can treat about 15,000 acres or so per truck, and we average about 600,000 acres a year. And these are more reserved for a smaller neighborhood type area.

Our aerial adulticiding program, we have quite the fleet there. We have several planes, makes and models, a little bit of everything. But we have basically the capability to treat about 23,000 acres per plane. And in the summertime, we could have, you know, two or three planes up per evening.

So, again, we are very much an aerial program here. So that kind of dictates a little bit of where we're kind of going with our treatments of the UAVs.

So our current use of UAVs are kind of starting small, if you will. We're using -- we have a couple of the store-bought products, the Phantom 5, and we have the Swellpro. We're currently using them now for inspections, pictures, training, that kind of stuff more than anything. We're in the process of purchasing a drone similar to Joel out there in California where he's talking about using them for spray capabilities. We're trying to see what we're --

how it's going to best benefit us.

So what we're talking about now is, you know, we're more or less looking at -- for larviciding only, very much like California. We're talking about a 35 or so pound payload. And we like the liquid and granular capabilities for the larviciding. And we really need the flight and spray data recording. Everything we do is tracked for spray on and spray off, and all of our treatment areas are preprogrammed in advance with our helicopters.

Let's see, here's a little list of some of our goals of kind of what we're looking for when it comes to that. So our short-term goals are more or less to incorporate more of the camera uses or camera capabilities of the UAVs. My God, the cameras are fantastic on these things. The ability to take a small unit and take it above the treetop level and be able to see what the tide is doing, is the tide creeping in, is it not too bad, how'd the rainfall do, that alone is very beneficial.

And more or less in the short term when we acquire our actual larviciding UAV, you know, we're looking at basically augmenting some of the applications that we would otherwise be doing by ground, you know, how can we make those applications a

little bit easier? So kind of starting small and build up and make it kind of easier as we go.

Some of our midterm goals is kind of looking at how we can augment some of our aerial larviciding applications. And I have a couple lists here, you know, some edge spraying, smaller treatment areas, sensitive treatment areas, and I have really good examples of those.

And then our long-term goals, you know, I kind of put some question marks on there. And the idea with that is the technology is turning around so quickly. It is just so much more advanced than it was a year ago. So for long-term goals, we have some ideas of what we're wanting to reach. But there's no telling what's going to be on the market in just a short period of time to be truthful.

I'm not going to go into it too much in this presentation here, but I have sterile insect release. We are currently setting up a sterile insect facility here at Lee County. We're actually going to be rearing, sterilizing and releasing our own mosquitoes for aedes aegypti to control some disease species. And the ability to possibly look at using UAVs to release those mosquitoes for us is going to be a huge benefit.

So we're really excited for that and looking forward to that. But, again, it's not anything too soon. And, also, the use of using UAVs to augment some of our aerial adulticiding treatments. I think down the road -- we're not looking to start with that, but I think down the road may be really beneficial. You know, some of the -- I have Outer Islands on there. We have several barrier islands that, you know, using a plane to adulticide kind of may or may not work. If you can kind of use a UAV, you may be able to get a better efficacy rate just by the slower speeds or lower elevation or whatever it may be.

So here I have some pictures of various treatment sites and kind of explaining what I'm kind of talking about when I'm mentioning my goals. The picture in the top left corner that has sewer plant, that's a picture of an area that we typically have to treat. We end up treating it usually with like a backpack treatment or handheld briquette of some kind. Those three ponds in total are about a third of an acre. So they're not very big. And it's not too bad. And it's very easily accessible. So for us, if we could, you know, maybe try treating that with a drone or a UAV, that would probably be a good first step for us. You know, small areas like that.

Just underneath it, we have the golf course pond. It's about an acre. That one in particular kind of stood out to me. We have this area that we typically get mosquitoes coming from. It actually affects a nearby trap so we can kind of watch the numbers. But the -- it's kind of difficult to get to. And what I mean by that is you can kind of get to half of it. You can walk up to half of it and you can kind of walk around it and you can find the (inaudible) treat the entire pond, especially with the backpack treatment. Sometimes you can't quite get the material all the way back to the back side of the pond.

And you can kind of see the woodline there in the picture, but it -- it's much more dense vegetation than what it looks like. So being able to take a UAV and maybe a granular application, for example, getting above some of that vegetation and go right over top of it, I think we'd get a very even coverage. I think that'd be real beneficial.

Here on the picture on the right side, I have -- this is a typical larvicide -- aerial larviciding treatment area for us. This is about a 62-acre plot of land, and you can see the green polygon that kind of outlines it. This area, you know, we treat routinely. This is a very high producer of aedes

taeniorhynchus, or salt marsh mosquito. And, like I said, we spray this currently by air.

Now, that red polygon I have that's on the southern end of it right up against that road, when we spray this by air a lot of times that edge right there doesn't quite get enough material in there to control mosquitoes. There's actually a ditch there. And what happens is when the helicopter is spraying it, it turns on -- the spray system turns on and off automatically so the pilots are not pressing a button, per se. But the system, that little pause of it turning on and off, a lot of times you just don't quite get it in there. You don't get enough product down. So what we'll end up having to do is come by and treat it by truck or try to treat it by hand, and it's kind of hit or miss.

You know, when I mentioned edge spraying in some of our midterm goals, that's kind of what I'm talking about. If we can actually take that polygon -- the green polygon, the treatment area, and reduce its size, bring that line up just a little bit and then do one swath with the drone along the edge of that, I think we'd probably be able to get pretty good control because I think the material would fall down in there, and I think it would actually be a more even

distribution.

This series of pictures is an idea of a -- kind of another midterm goal of ours. This may actually augment our aerial larviciding applications even more. This is a -- you can see the kind of picture on the far left there. That's a good overview of what I'm talking about.

This is an area that is kind of a funky shaped polygon that's right between a road on the east side and a set of beachfront condos on the way. Again, this breeds aedes taeniorhynchus and it's a very high breeder. It produces them all throughout the summer months and it's affected by tide and rain. And to spray it by helicopter, it's not exactly a straight polygon box that you may think of when you hear of us treating.

So this kind of curves along the roadway and it's kind of a sensitive area. Right? So we have -- like I said, that road, the main road of the island, and the people that are living or staying in those beachfront condos don't necessarily want that helicopter flying treetop level over top of them.

So for us if we could maybe kind of parcel this up into separate little pieces and be able to treat this with a UAV, probably a granular type, that

would probably solve a couple problems for us. So we're kind of excited for getting our hands on something and being able to use it in applications like this to kind of help, like I said, augment some of our aerial larviciding programs.

And with that, I'm going to actually go ahead and transition over to Kevin Watts. He is the deputy director of Lee County Hyacinth Control, and he's actually going to go ahead and talk about some of the possible benefits of UAVs for their program as well.

MR. WATTS: Thanks, Ed. I'm going to make mine pretty short and sweet here.

MR. KEIGWIN: Hey, Kevin. Kevin?

MR. WATTS: Yes.

MR. KEIGWIN: Yeah. Thanks, Kevin. I was going to just say we're coming up on our time and we've got a public comment period at quarter of. So I just wanted to focus you on the time.

MR. WATTS: I'll speed this thing up probably within three or four minutes and then hop off. How's that?

MR. KEIGWIN: Okay. Yeah, whatever you need. But just wanted to focus you on the time. Thank you.

MR. WATTS: Okay. Just real quick, Lee County Hyacinth Control District, we share the same

facility as Lee County Mosquito Control. We were created in '61. We have the same board of commissioners and the same executive director who's actually here today, Dr. David Hoel.

I'm just going to click forward here. We're in the early stages incorporating small drones primarily just trying to figure out what we could utilize as we move forward. I'm kind of pumping the brakes here initially just because this technology is moving pretty quick. And for aquatic herbicide applications, you have to be quite cautious.

With that being said, one of the questions I had was, you know, access to water bodies might determine which license that you're required to use, either the 107 or the -- you know, the 107 or the COA, the COA. I currently have one employee that has his 107 and I have another one that's applying iCard test sometime here in the next week or so.

We also are going to apply for a COA as well because we'd like to incorporate that in our program for the smaller drone to help us with better assessment on aquatic plant species. We do what are called biannual transects where we measure the plant height and the water column beneath the water surface, obviously, through bathymetry data. We'd like to be

able to also do that with drones while we're on the boat so we can assess what's on the surface as well. So we're slowly trying to migrate that into our operational plan.

One of the things I was thinking about also was trying to -- for us, when we put a boat in, we always measure for, like, dissolved oxygen. We take water samples. I thought maybe something could be in the language for, you know, if you're operating or using a -- you know, a UAV.

Another quick thing with factors concerning incorporating the use of UAVs, the maximum height restrictions, especially for aquatic herbicide applications. We definitely want to be the lower the better because we don't want to have any kind of an adverse incident associated with drift.

So I'm just going to go ahead and switch over to the next one real quick here. This would be a nice conducive site. It's about a one-acre plot of land with water hyacinth, which is an invasive species and a host for mansonia mosquito species. Our topography here doesn't have the undulation such as in other places across the country. Coming in from the Gulf of Mexico, the elevation increase only averages about a foot in elevation for every mile. So we're relatively

flat as a pancake. This would be an excellent site for utilizing a UAV.

This one here is a site called FGUA. It is a series of settling ponds, about 35 acres. It's got water lettuce and water hyacinth in there. We were going to do an aerial application with helicopters, but we didn't want to have nontarget damage, especially on like the center row of canopy coverage there.

Also, in this next slide where we brought in the airboat, we had to crane lift it in because we were unable to put in a boat ramp. It would be nice to be able to utilize a drone. But another factor is on the far right part of the screen there, those were nesting sites for endangered Everglade snail kites. And also there is an eagle nest in the proximity as well. So using drones, I think that's a factor as well when you're trying to also do applications when you have those types of protected species.

And then just another real quick one. This is my last quick slide here, just a cross comparison. This particular site here, the one on the left is an 18-and-a-half acre water body. It's comprised of water hyacinth, about 13 acres in there. What we did was we flew a drone over there using one of these

latest programs for basically measuring plant health. And as you can see indicating here, it helps us to assess what has been damaged through actual treatments.

And I don't know if you're able to see the cursor as I move it, but you can see the path on the top of the screen coming down right through the middle of the water hyacinth is where we treated that area. The other areas down towards the bottom were not treated with actual herbicides. There were releases of two different -- well, one species of biological insect called a planthopper megamalice, which is already starting to damage the plant as well. But it helps us to assess our program and what the benefits are with our applications and incorporating drone usage.

I'm just going to switch over to the last slide here and maybe let Ed touch on these last quick points. But we just want to go over basically what some of the challenges and questions were associated, you know, with UAVs as we move forward. And having the various agencies involved, the FAA, EPA, FDACS, with what permits and licenses are going to be required, and then what we need to have on the labels, especially for versus the aerial applicators and UAV

applicators. That was a quick run for me. Thanks.

MR. KEIGWIN: All right. Thank you. And then we are going to turn it over to Damon. I think -- I just wanted to confirm, our list shows only one public commenter at the 4:45 time. But I guess it would be hard to confirm that.

UNIDENTIFIED MALE: We'll go with that.

MR. KEIGWIN: So we'll go with that. Yeah. So what we're thinking about for the discussion is if we don't have time today, we'll maybe carve off a little bit of time tomorrow to have a discussion on that. So with that, I'll kick it over to Damon.

MS. REABE: Well, I'll try to keep it short. We're waiting for the slides to come up. Good. Now we'll see if I can move them. So I'm going to just preface all of my comments that these comments are in regards to UAVs being used for aerial application of pesticides on large egg use scales.

So I'm not referring to the use of UAVs where they may be replacing something that's being done with a backpack or with a person walking around with a sprayer wand. And the reason why I've got this background up here is to showcase that the market that's producing these aircraft, the intent is actually to get these products to full scale to be

used in large scale ways. And when we're thinking of regulatory policies and an accounting for this technology, we have to think about what it's going to be like down the road.

So if we make rules and policies at this point, we have to understand that eventually the current largest UAV that I've seen is almost the size of this entire table all the way around. Right? And the aircraft, as they get larger, are going to have other greater concerns and a lot of these benefits that we're talking about actually aren't going to be the case because of the actual physical size of the aircraft relative to the size of the droplets that get released.

Just a quick briefing on what manned aircraft can do. When we talk about unmanned aircraft, we get really caught up in the technology. And what gets forgotten is that most of this technology is available either currently on manned aircraft and has been for a very long time, or is easily attached to manned aircraft.

Because the vehicle is unmanned doesn't -- is not what makes the spray -- the spray equipment precise. It's the utilization of the GPS guidance. It's the utilization of on-off control. These are

things that are currently and have been used in manned aircraft for going on 30 years now. We just don't come in and talk about the attachments that go onto our aircraft in this manner.

So we have GPS guidance systems that run on 20 hertz. They're used by 99 percent of the industry. Our work orders are -- everything is GIS mapped. We can push and pull work orders through our GPS, back to our offices, receive them in our aircraft through cellular connections. We can do variable rate applications. We can do constant rate applications. We can do spot applications. We can perform applications per prescription maps.

This technology has been developed many, many years ago. We don't talk about it a lot because the science behind taking, say, an NDVI image and turning it into a pest control prescription map, simply that science hasn't been perfected yet. In Wisconsin, if you were to do research on pest management of, say, spider mites and soybean aphids, in no part of the University of Wisconsin's documentation did they talk about how you would use an NDVI image to control those pests and only spray those parts of the field.

So the concept of spraying parts of fields is absolutely possible with the current manned aircraft

technology to the point where we have actual individual nozzle control on the aircraft. We have onboard weather measurement systems. We have robust enough modeling to know where the chemical lands out of each individual nozzle depending upon where it's placed across the wingspan of the aircraft and know where that product will land in that given wind. So this -- the reason why this technology hasn't been widely adopted by our industry is because there hasn't been the demand for it.

I'm going to spend a fair amount of time on spray drift risk assessments. I don't want to read every single slide, you know, every bullet point here, but ultimately when a registrant wants to get a registration, the EPA has very specific protocol on spray drift risk assessment. Right?

So that spray drift risk assessment is done by the EPA with a model called egg drift. That egg drift model was developed using the predictive aerodynamic forces of either a fixed wing aircraft or a single rotary wing helicopter. And those predictions were then verified in extensive field studies that were done by the spray drift task force.

The model was then further refined for greater accuracy. The model was then subsequently --

went through extensive scientific review to again further refine its accuracy, and it again is currently used as part of the registration process. It's not just for aerial application. This is also for ground application and orchard air blast sprayers.

Next slide, please. So this is an example. And we don't have a lot of time to spend on it, but there's a library of aircraft within the model. Every single commercially used aerial application vehicle is in this library. We can make adjustments to the nozzles. We can make adjustments to the boom height. This flight line input was based upon the spray drift task force findings. We can adjust wind speed, whether it's a crosswind, we're going into the wind. We can change humidity.

Next slide. Once we get into the aircraft section, this is accounting for the aircraft weight, the aircraft's wingspan, the actual speed that the aircraft flies, what the RPM of the propeller is, the propeller radius. All of these various inputs -- and I don't want to explain every single one of them -- all of them affect the deposition of the pesticide application. And it also affects the spray drift.

Next slide. On this particular slide, we can see how the nozzle height can be changed. It can be

moved fore and aft relative to the wing. Again, an extreme -- what I'm trying to point out here is this is a very robust model that is used to predict pesticide drift from an aircraft. Okay?

Next slide. So unfortunately what we don't have for multi-rotored vehicles is any predictive aerodynamic modeling available to us, nor do we have anything available in this model to tell us where the nozzles are placed relative to the not yet modeled aerodynamics of these machines.

We have -- none of the field studies have taken place to support the accuracy of this model that actually hasn't been developed yet. So what that means is the EPA is unable to do a spray drift risk assessment.

Next slide. And this is an example of a drone -- and I use this -- what you can see here is the material that's coming out of this nozzle is actually being curled and affected by this rotor. The material that's coming out of this nozzle is being curled and affected by this. And what we have is just a giant amount of drift that's basically -- those are the risky droplets. Other things we're not considering. We've got in this case a nozzle that's located within 75 percent of the rotor width, except

for when the material comes out of that nozzle and fans out. By the time it gets to its final fan size, it's more than, say, 90 percent of the rotor diameter. That's an example of what hasn't been looked at and why the existing label language does not account for what happens when we use a multi-rotor vehicle for this type of application.

Next slide. This is a very large vehicle. It's hard to tell scale here. But this is approximately -- just to give you an idea, that's about -- approximately a 40-foot boom across the back of this vehicle. It's a ducted fan machine. And what's happening here, if you notice the material being released on this side of the boom is coming towards the center as well as this. Air is being accelerated through this machine. It's creating a low pressure area underneath the machine and it's drawing the material from both edges to the center, which is a good thing in regards to drift; a bad thing in regard to efficacy. So yet a different design, different multi-rotor design, having a great deal of impact on deposition.

Next slide. So what does it mean? To me, I'm having a hard time imagining if we can't perform a spray drift risk assessment during the registration or

re-re-registration process of a pesticide, how that application can actually be considered legal.

It's certainly -- the drift -- the pesticide drift possibilities are absolutely unknown. One thing I didn't mention is we're not even accounting for techniques. These multi-rotor aircraft act extremely different in forward flight through something called effective translational lift versus when they're in hover.

So are the applicators -- there's no training for the applicator to figure this out. So when we're making framework, it's very clear to me that the process here is we need predictive modeling added to the Ag drift library. We need those -- that modeling to be confirmed, its accuracy through field studies like what the spray drift task force did. And at that point, we then can discover the techniques, nozzle locations, all the appropriate safety measures that then would become the label language that these unmanned aerial vehicle users would follow.

Next slide. So next steps. I think I really kind of hit on that. I think, you know, there needs to be some direction to the state lead agencies. I don't think that an unmanned aerial vehicle meets in any way the spirit of the aerial application language.

And this work needs to be done before there's further use of these tools.

And I think I've -- I think this is about wrapping it up. Let's see, next slide. Last thing I'll point out, we talked a little bit about mixing and loading systems. We use closed loading systems. We can load -- this is a great example. If we've got a 250-acre treatment site that requires two gallons per acre of treatment total volume, we fill the airplane once. When we disconnect, any possible spill happens at that disconnect point. A 5.9 gallon payload UAV is 85 fills. And it just kind of helps put it in perspective.

Regarding night operations, the industry survey that just came out recently last year, aerial applicators treated two million acres at night. We've been doing this literally since the 1960s. Our issue in -- for night applications primarily has to do with the length of the night. We run out of available timeline to accomplish the task.

So -- and I think that -- I have one more slide. But really we've got a template for action here. The process for registering a pesticide and doing spray drift risk assessments doesn't change because we have a new piece of technology available to

us. If we're doing an assessment to protect the environment, workers and society, it needs to be done no matter which vehicle is doing the application. And I think we should be looking at exemptions for extremely small areas like I mentioned in the beginning when we talk about backpack sprayers. I think a lot of what's been presented today on mosquito work seems like just exceptional uses for this technology. But, again, we need to be addressing I think the bigger picture.

MR. MESSINA: Thank you, Damon, for -- and everyone on this panel for your thoughtful comments. With that, we'll have discussion tomorrow and we'll go into our public session. I'll kick it over to Rick to take over that.

MR. KEIGWIN: So Mr. William Jordan, please.

MR. MESSINA: And has anyone else signed up?

(No response.)

MR. MESSINA: Okay. Thank you.

MR. JORDAN: Thank you for the opportunity to make some comments. I have a few comments on each of the first three sessions. My name is William Jordan and I'm an independent environmental consultant. I'm also affiliated with the Environmental Protection

Network. We are on the co-lead for the focus on pesticide regulation by EPA.

The Environmental Protection Network, for those of you who don't know, is a group of several hundred public citizens who -- many of whom are like me, former EPA employees who are interested in preserving and extending the legacy of EPA's work over the last 50 years.

So let me turn to session one, the discussion of PRIA 4. And I'll start with the conversation about the methods for assessing the effectiveness of worker protection standard training programs and grant efforts.

I think Rick Keigwin talked about the interest that the Agency has in shifting from outputs to outcomes. And in the long run, the purpose of training is to teach the people involved with pesticide application in the agricultural sector how to do so safely and to avoid accidents. And outcomes in this particular case means looking at whether pesticide exposures have led people to become sick.

And the best information that EPA has on that is the data collected through the SENSOR Program. And so it seems to me really important for EPA to continue to support, and if possible expand the scope of the

SENSOR data collection efforts.

Even if you're not able to expand SENSOR data collection to additional states, I think it's important to analyze the data that are collected -- are being collected through SENSOR. I attempted to get information about pesticide poisoning frequencies and characteristics in order to evaluate the proposal that's now at OMB on the application exclusion zone.

And the latest data that I could find predates the amendments to the worker protection standards. So there are data out there that EPA could be looking at to decide whether or not any changes to the application exclusion zone provisions of the WPS are necessary, and also to evaluate the impact of the training program to see if, in fact, it's changing behavior and making people safer.

In addition, Steve Schaible talked about a couple of reports that are being created in OPP in response to PRIA 4. Two in particular caught my interest and I hope they'll be made publicly available through EPA's websites. The reports on the overall progress of the registration review program and also the reports on ESA spending by OPP.

Shifting to the second session, the public health workgroup's report, which I thought was

excellent. I wanted to follow up on two comments that members of the PPDC made. Dr. Richard Gragg commented that EPA should be working on emergency preparedness, in particular connected with pesticide use.

To me, that makes a lot of sense. I think that it's pretty foreseeable that in the case of natural disasters, hurricanes, floods and that sort of thing there may be needs for unexpected additional pest control. What comes to mind in that regard is the cholera outbreak in Haiti; also the greater opportunity for mosquito-borne diseases in the wake of hurricanes and floods.

And what I would encourage OPP to think about is getting together with FEMA and the Department of Homeland Security to consider with them how to factor into their program for staging responses the potential need for additional pest control programs.

Sharon Selvaggio talked about the future work of this public health workgroup and suggested looking at unplanned releases of pesticide spills and accidents. I think that OPP has a potentially very valuable role to play here. OPP has enormous information about the toxicity of pesticides. It has deep resources in risk assessment, and yet so far as I know OPP does not preemptively or proactively plan for

risk assessments for people who may be responding to those unplanned releases. People who are first responders or people who are in the vicinity of where one of these unplanned releases happens.

So I would encourage OPP to think about working with your colleagues at the OSHA group that sets permissible exposure limits and short-term exposure limits to begin to develop those standards so that they would be immediately available in case something unplanned, unfortunate happens, like a spill or an accident.

And then the last session that I'd like to comment on is the hemp session. And I have a fair number of thoughts on that point. The first one, and I think probably one of the most important policy decisions that OPP needs to make, is whether it is willing to entertain the registration of pesticides for use on hemp that would be considered nonfood uses.

And before I talk more specifically about what I think might make sense in the context of hemp, let me just acknowledge that OPP in the past has looked at particular crops that have both industrial uses and food uses. Corn, for example, is used to make ethanol and it's also used for animal feed and human food.

And in the past, OPP has tried to on occasion segregate the use of pesticides on crops in a way that would make sure that segments of these crops go to uses ultimately that don't need tolerances.

Most of the time -- in fact, as far as I know, all the time that has failed; sometimes fairly spectacularly. And what comes to mind is the Starlink experience. And I think that would probably make OPP cautious about allowing registration of pesticides for use on hemp without a tolerance. That would be something that you all should be very cautious about doing.

There are a couple of reasons, however, where I think you might want to revisit that sort of policy inclination with regard to hemp. First of all, from what I heard today -- and I think it bears further examination -- it appears that hemp products are produced in different ways agriculturally, agronomically. The expert described fiber, grain and oil production practices as having very different agronomic practices, treatment and handling. And so that may, I think, justify different approaches depending on which of those eventual end uses might be intended for the hemp products.

And the second reason that I think it might

make sense to look at hemp and segregate the use between nonfood and food uses is because of the potential for state-level controls. And this is where I think Liza Fleeson and her colleagues and other state lead agencies may want to think about their role in controlling the eventual uses of the hemp products.

At the state level, every hemp -- legal hemp grower will be registered, licensed, and there will be controls over the hemp products that are produced to make sure that they are, in fact, legal; that they don't contain more than .3 percent of THC. And as part of that control process, states could, if they wanted to, I believe, exert control over whether the hemp products go into what might be considered food supply versus whether they would go into nonfood uses like clothing or rope or things like that.

And if the states consistently did engage in that kind of oversight, it would seem to me that that would make it possible for EPA to approve pesticides for use on the hemp products even in the absence of tolerances. So all of those things I think bear further consideration in the course -- in the context making. But I think it's a pretty important policy judgment.

But even if EPA decides -- and I'm sure that

eventually people will want to have pesticides for use on hemp that is eventually destined for food uses, I think there are some important considerations. To my mind, it's very valuable to start getting pesticides approved for use on hemp. And one of the faster ways it seems to me potentially to do that in the case of food uses is to begin looking at crop groupings. And Dan Kunkel has already mentioned the fact that IR-4 sees, some potential surrogate crops that are sufficiently similar to hemp that the data generated on those surrogate crops may be representative or informative of the residues that one might expect in hemp.

To the extent that that's the case, trying to move quickly toward getting hemp included in crop groups would accelerate, I think, the process for approving pesticides for use on hemp.

Most of the conversation this afternoon focused on getting pesticides for the users. And I think that's a great thing and I think that the users will certainly appreciate that. But I don't want OPP to ignore the potential environmental and public health risks of approving new pesticide uses. And there was just not a lot of conversation about that. So I want to just quickly mention a few things that to

me are concerns that OPP ought to be looking at.

I want to start with worker exposure. The agricultural re-entry task force database should be examined to see whether there are scenarios in that task force database that would represent the kinds of worker activities that would go on in hemp production in terms of fiber, grain and oil. My hunch is that there really isn't anything quite like what is going to go on. But you also should examine that closely to become informed about how hemp will be grown.

In terms of consumer exposure, there's such a wide range of potential products that can be made from hemp that I think the consumer exposure challenges are going to be very significant. Rubbing an oil that may contain pesticide residues on one's skin is very different from having -- handling a rope that may be used to tie up a sailboat or something like that. And people are talking about making clothing, so what would that mean in terms of the people wearing that clothing and their exposure.

There wasn't a lot of mention about ecological effects, but to the extent that acreage expands, paying attention to the effects on nontarget wildlife, particularly endangered species, would be something of concern.

Last thing I want to mention is what I see as being some important links between hemp and marijuana. There obviously is an attempt to distinguish between legal hemp and illegal marijuana. But I think that problem arises in the context of using pesticides on growing plants.

When the plant is growing, it seems to me it's going to be very hard to figure out whether the dried material made from that plant is or is not going to conform to the definition of legal hemp. And so I hope that in your consideration of your policies about registering pesticides, you'll think about how to tackle that question.

I would encourage you to understand that using pesticides on hemp will probably be the model in states that have legalized growing marijuana for medical use or recreational or adult use as to what can or cannot be done safely, and that, in fact, the cannabis plant may be, for all practical purposes, indistinguishable whether it's for medical marijuana or for legal hemp.

And finally I'd like to say that I hope as you look at the Pruitt letter and the policy with regard to special local needs that you'll reconsider the role of the states. The states could

play a very helpful role in figuring out what these problems are and getting ahead of the game. I don't see any statutory bar or prohibition that would prevent state legal -- state lead agencies from issuing legal registrations for use on marijuana as well as hemp.

And I think that ultimately that would benefit the public interest in that it would provide clear controls about how to use pesticides safely; controls about using pesticide safely on marijuana; would be a positive step because it would mean that the workers would be protected, the consumers would be protected, and the environment would be protected, all of which are to my concern not being adequately protected because of EPA's reluctance to step into this area.

And folks who are growing marijuana for those medical marijuana and adult-use markets are using whatever they can find that works to deal with the pests, and they're doing so without necessarily having any good guidance about how to do so safely.

So thank you for the opportunity to let me comment, and I'm done.

MR. KEIGWIN: Thanks, Bill. So we're a

little bit over. So in the interest of you all having spent all day here and probably needing a break, we're going to end for today. But I did have a question for everybody. So we never did get to have a discussion about what we heard about UAVs. So I wanted to get some input from you all on how we could restructure tomorrow.

So we do have our new assistant administrator joining us at 9:00. So that's -- that's pretty firm. One option is to kind of reallocate the time a little bit for the three topics after Alex that we have on the agenda. Another option would be if we want to start at 8:30 and have -- I'm already seeing grimaces. So I understand completely. But that -- that would be an option to pick up 30 minutes.

So the grimaces may have it already, but I'll just kind of check with folks to see if there's a preference. Oh, Jay is smiling. But thoughts? Any hardship if we were to start at 8:30? Okay. So why don't we start at 8:30 so that we can begin the discussion. I suspect we'll have a very robust discussion about UAVs. And when Alex comes we'll break and we'll kind of see where we're at and then we'll flow from there. Does that work?

All right. Thank you, everyone. Thanks.

Jay?

MR. VROOM: (Inaudible).

MR. KEIGWIN: We may. But --

MR. VROOM: Most of them were outside presenters.

MR. KEIGWIN: Right.

MR. VROOM: (Inaudible).

MR. KEIGWIN: Right.

MR. VROOM: And Rose was represented, you know, by Liza, too, a little bit. So I think we're good. Great question, but I think we're good.

MR. KEIGWIN: All right. Thanks, everybody. Have a good evening and we'll see you in the morning.

(The meeting was adjourned and scheduled to resume the following day, May 9, 2019.)