Erin Farley: Good afternoon everybody. My name is Erin Farley and we are going to go ahead and get started. So just to introduce myself for those of you who may not be familiar, I am one of JRSA’s research associates and JRSA stands for the Justice Research and Statistics Association. We are a national nonprofit organization dedicated to the use of research and analysis to inform criminal and juvenile justice decision making and we are comprised of a network of researchers and practitioners, which at the core include, directors and staff from state statistical analysis centers.

Erin Farley: And before I welcome our presenter, I just wanted to remind those [inaudible 00:00:44] attendees who are participating today that we have our upcoming eastern regional training institute in November and so if you haven’t registered for that conference, please do so, and if you have any questions, feel free to reach out to me and I will answer any questions.

Erin Farley: So with that, it is my pleasure today to welcome you to our webinar that's titled, Adding Geospatial Context to 'Big Data' with RTM and this will be presented by Joel Caplan. He is an associate professor at Rutgers University, School of Criminal Justice and the Deputy Director of the Rutgers Center on Public Security, where he codeveloped risk terrain modeling, RTM. His applied research focuses on risk assessment, spatial analysis, and policing.

Erin Farley: So welcome, Joel, and before we go any further, I do also want to take a moment to thank our partners at the Bureau of Justice Statistics for helping to make this webinar possible. And with that, I will hand it over to Joel. So welcome.

Joel Caplan: Thank you very much, Erin. Can you hear me okay?

Erin Farley: I can. Yes.

Joel Caplan: All right, good. Hello everybody. Thank you to JRSA for inviting me to do this and to Roger and Erin and Jason for the invitation and for making sure that technical issues were out of the way so that we can get started without any delay. I’m going to introduce you to risk terrain modeling and various aspects of it. Please feel free to ask any questions if you have any along the way but I did save time for questions towards the end.

Joel Caplan: Basically, risk terrain modeling offers a structured framework for risk analysis, that’s place-based and actionable. The way that I like to begin introducing it is by asking you to consider a place where children repeatedly play. If we focus only on the kids, we would miss the presence of swings and slides and open fields that is what we might define as a playground that attracts children to this location instead of other locations that are absent of such entertaining qualities. Features of the landscape are influencing and enabling playful behavior. If we focus only on the kids, we would miss the presence of swings and slides and open fields that is what we might define as a playground that attract children to
this location instead of other locations that are absent of such entertaining qualities. Features of the landscape are influencing and enabling playful behavior.

Joel Caplan: Now with this in mind, we developed risk terrain modeling at Rutgers University to identify features of the environment that attract crime and to show how they interact with each other to aggravate crime risks. RTM was invented to identify, basically, unique behavior settings for crime. You could probably imagine that cliché dark alleyway when you think of this topic and in this case, we're considering at least two attributes. That is, an alleyway and poor lighting. Now each of these factors might be risky, but we expect that the risk of crime is exceptionally high at places where these factors coexist.

Joel Caplan: Risk terrain modeling does something similar but in a more statistically robust way. It begins by testing a variety of environmental factors against event locations to measure their spatial influence. Valid factors are selected and then weighted to produce a final model that basically paints a picture of places where certain behaviors are statistically most likely to occur. For nearly a decade now since risk terrain modeling was developed by Doctor Kennedy and I, we've been working with police agencies in the US and also around the world to test risk terrain modeling and to keep it grounded and practical, to meet both the needs of police and the communities that they serve.

Joel Caplan: Experiments funded by a variety of federal agencies have been conducted in multiple cities throughout the US. Policing strategies that target high-risk places have resulted in as much as 35% fewer gun crimes, 33% motor vehicle thefts, or 42% fewer robberies, compared to control areas, among many other positive outcomes in all the jurisdictions studied. Focusing on risky places has been shown to really work to reduce and prevent violent and property crimes. Traditional crime analysis methods, such as hot spot mapping, for instance, assumes that crime doesn't move, that it will always occur in the future where it did in the past, even when police intervene. A heavy reliance on past crimes as the predictor of future crime is not sustainable, especially when the goal of policing is to have a measured impact on preventing crime altogether.

Joel Caplan: Now granted, it's very unlikely that any jurisdiction is going to be 100% successful at preventing crime. Unfortunately what tends to happen is that crime hot spots remain stable or resilient over time, despite the many foot patrols or arrests or citations and other traditional policing tactics that are utilized there. That's because hot spots tell you where crime is happening, but not necessarily why. They tell you where the problem is but they don't consider the environmental factors that make these areas attractive and opportunistic in the first place. Hot spots are signs and symptoms of environments that are suitable for crime but they offer very little insights for solutions to manage crime problems.
Joel Caplan: Risk terrain modeling adds to this by providing a spatial diagnosis, so that we can learn where to go, what to focus on when we get there, and why we are doing what we do. RTM helps us stop playing whack-a-mole, so that we can focus our attention on the mechanisms that enable hot spots to emerge, persist, or desist. Now, risk terrain modeling was originally developed to solve a problem that many of us face, that is how to leverage data and insights from various sources and then to make that information actionable. With risk terrain modeling, we bring multiple sources of data together by connecting them to environments where people live, work, or behave. The landscape, the environment, becomes that common denominator and it produces spatial risk assessments for crime and other types of problems that incorporates statistical methods as well as professional and practitioner experiences and insights about places and events in order to add context to this data, specifically, spatial context.

Joel Caplan: Data may be the new gold rush, but without context, it can be useless. So we all want to be empowered to make informed decisions, to solve problems and to get the credit that we deserve for the success that we've achieved. The public demands that our actions be measured, that they be transparent, and evidence-based, and that there be a utilization of resources that is sustainable, both financially, politically, and with regard to community relations. Risk terrain modeling doesn't do all of this for you but it does help you do a lot of it efficiently and effectively.

Joel Caplan: So by using geographic places as the thread that weaves information together, risk terrain modeling finds connections among data at shared places and times and it identifies how the physical environment influences events resulting from human interactions at places. For example, within my field of study, I've seen firsthand how police agencies use risk terrain modeling to predict, prevent, and investigate all types of crimes, including violence, property crimes, gangs and organized criminals, drugs and overdoses and even traffic crashes. For predictions, police use RTM to forecast high-risk locations and then deploy resources, such as police patrols. For prevention, directed patrols coordinate with a variety of stakeholders to reduce crime at the high-risk places and for the crimes that are not prevented, RTM is used by detectives to create geographic profiles that assist with investigations and serve as evidence to help clear cases.

Joel Caplan: With a diagnosis of the environmental attractors of illegal behavior, RTM can make very accurate forecasts of new crime locations, even if crime never occurred there before. Time and again, as little as 1% of the highest risk places that are identified in a jurisdiction have accounted for well over 40% of the crimes that were not prevented and when crimes displace, they tend to emerge in other risky places, as expected. The forecasted places become the focus for crime prevention. This is because RTM makes consistently accurately forecasts. These high-risk places are the target areas for these prevention efforts, such as directed patrols or other stakeholder engagements. With regard to patrols by police, every patrol officer gets a map showing the priority places that are
specific to their coverage area. They also get instructions on what risky features to focus on and what actions to take at these locations. Police still patrol all parts of the city, they investigate crimes and they clear cases. They just give a little extra attention to the risky places.

Joel Caplan: Actionable intel comes from both the risk terrain maps and the tables. Tables show crime attractors, which help commanders decide what factors to focus on that truly correlate with criminal behavior, such as convenience stores or rooms and the relative risk values allow comparisons across risk factors to help prioritize mitigation efforts. We can also see how risk factors influence behavior and the extent of this spacial influence. For example, we might have assumed that parking lots relate to robbery, but it's not proximity to any parking lot that heightens risk, it's only areas with high concentrations of parking lots that attract robbery incidents most of the time and therefore, pose more than three and a half times greater risk of robbery than elsewhere in the town.

Joel Caplan: We can also consider timing to determine, for example, that schools or parking lots are only risky at certain times of the day in the same way that we might have assumed bars to have different spacial influences at 10 PM on a Friday compared at 10 AM on a Tuesday. The risk terrain maps and tables produce evidence that enables multiple local agencies to share the burden of crime prevention, to mobilize their resources, and to coordinate their efforts to reduce crime risks. For instance, while police focus patrols on high-risk places and do business checks at laundromats located there, they may also pay attention to nearby vacant properties at peak times. Meanwhile, the city planning department can prioritize their boarding up or demolition of vacant properties and public works can fix the street lights at these priority locations.

Joel Caplan: RTM is also used to geographically profile offender preferences to assist criminal investigations. Here's a map of burglary in [inaudible 00:13:01] locations from March through May 2017 in Atlantic City. During this time, there was a burglary series that was identified in districts one and two. Detectives believed these burglaries to be connected to a pair of offenders, so they used risk terrain modeling to analyze the incidents and to profile the offender's spacial preferences to anticipate the next likely targets. When police do things like this, it allows detectives to prioritize surveillance and to catch offenders quickly. By May 10th, both of the suspects were arrested due to the excellent police work of the department but this map only shows ... On this map here, it only shows the burglary incidents that occurred after their arrests.

Joel Caplan: Needless to say, the police believed that they got the right people. But RTM also linked open cases to the suspect's spacial profiles. Police ran the risk terrain model on the burglary incidents that were thought to be connected to these offenders, to geographically profile their burglary location preferences. Results showed that the offenders' cases were located in their preferred areas, shown here in red or orange. And this would have been expected but there was also a
Adding Geospatial Context to Big Data with Risk Terrain Modeling (RTM)
October 4, 2017

red area, way outside in district five that had an unsolved burglary located in it. The investigation was reopened and as it turns out, one of the suspects regularly slept in a house nearby. Now this burglary was connected to him too.

Joel Caplan: These police use cases are part of a larger risk-based policing initiative currently underway in Atlantic City. With each new risk terrain model, they follow a process of creating risk narratives and developing risk reduction strategies accordingly. For example, risk terrain models for robberies and shootings, which the police believed to be closely tied to the drug trade, were identified as convenience stores ... identified factors such as convenience stores, laundromats, and vacant buildings, as the top risk factors. The consensus around these results was that convenience stores were places that were easy to loiter, open late, and there was a lot of traffic in and out. This allowed dealers to sell or solicit buyers. The nearby laundromats, which were usually coin operated, open late, and not regularly surveilled or managed by a human manager, were places where the buyers were told to go to make the transactions. And the nearby vacant buildings were used as stash houses for the dealers or for the buyers to go and use the drugs out of sight.

Joel Caplan: The risk reduction strategies that were employed in response to this type of risk narrative focused on disrupting the narrative. In the first quarter of 2017, the Atlantic City Police Department and the city of Atlantic City, have had month to month crime reductions. 22% fewer robberies, 20% fewer violent crimes overall compared to the same time last year. This particular project was led by the police department in partnership with Doctor Kennedy and Doctor [Dravey 00:16:48] at Rutgers University and this crime drop, which was really the work of the police intervening to disrupt this narrative, coincides with the police department's intervention activities that were specifically focused on the risky places in the city. Their efforts were actually highlighted in a recent National Geographic TV series, called Predicting the Future.

Joel Caplan: So risk terrain modeling is the engine under the hood of the risk terrain modeling diagnostics software, or RTM Dx. In just a few steps, the software diagnoses who your data relates to features of the environment, how these features interact, and where they collocate to attract certain types of behaviors resulting in the outcome events particular to your town, state, or region.

Joel Caplan: The software is actually in a new iteration. It's being updated as we speak and these are a few screenshots of the new version. It's pretty easy and straightforward to use. You can have multiple projects and multiple analysis and with in each analysis tab, you basically follow the wizard through a series of steps to enter your data and run an analysis. For example, to look at robbery in Atlantic City, you enter the robbery data in terms ... I'm sorry. You enter the study area, in this case the police districts in Atlantic City, and then you click next. You enter the units of analysis and your multipliers such as 308 feet, which represents the average block length in the city and 154 feet, which is half of
that, which represents the unit of analysis. This is the unit at which the forecasts are made, in this case, the equivalent of half a block.

Joel Caplan: The analysis issue in this case is robbery and we input the robbery data that we want to analyze as either a shape file, point shape file, CSV file, or even KML file, and we can filter this data as we choose to by date, by time of day, or by any other attribute. Then we input the risk factor data. This is more or less features of the environment that we use to model the geographic space. Gas stations, hotels, laundromats, liquor stores, and so forth. We click next, we summarize the data, then click run. Once the analysis is run, it presents results in the form of maps as well as tables. The maps and tables both provide information that could be used for forming risk narratives as well as for deploying resources.

Joel Caplan: Most of the data that’s necessary for doing risk terrain modeling, should you choose to do it, you probably already have and you probably already have the local expertise to then make use of these risk assessments. The software just helps you quickly analyze and synthesize these insights. Although, you also could do all of this manually and resources for doing that are online as well.

Joel Caplan: In Texas, as kind of a final example to this, risk terrain modeling was used to identify risky places for child abuse and then organizations that help child abuse victims and other abuse victims, used the risk terrain maps to target social media ad buys and to put boots on the ground in high-risk places, to help potential victims get out of dangerous situations before the abuse occurs. The environmental context for crime or other hazards, whether they're in Texas or Atlantic City or Arizona, will vary across different cities and different crime types. You can think about this through the analogy of a kaleidoscope. The cylinder of the kaleidoscope represents the particular environment or study setting that we’re interested in examining. The shards of glass represent crime attractors or features of that environment, such as bars, fast food restaurants, parks, or grocery stores. Moving from environment to environment represents a turn of the kaleidoscope, so the pieces come together in different configurations. Each representing unique spacial and situational contexts that have implications for behavior at those places.

Joel Caplan: We may know that crimes or other hazards or hazardous incidents cluster spatially but we can't assume that a standard response to these problems at these locations will yield similar successes. Behavior settings differ, so risk terrain modeling helps to tailor the interventions and the responses within your jurisdictions accordingly. The use of risk terrain modeling keeps problem solving efforts grounded and evidence based. It allows for better utilization of resources and also increased transparency. It can provide actionable insights for improving coordination among various agencies and practitioners for informing decisions about where to dedicate resources and directs strategies and for justifying collaborative problem solving among many stakeholders, not just police.
Adding Geospatial Context to Big Data with Risk Terrain Modeling (RTM)
October 4, 2017

Joel Caplan: Simply stated, risk terrain modeling is a decision making tool that meets the demands of risk governance in the 21st century. Now I know I've mentioned crime a lot but I know of risk terrain modeling being used for many other topics in the fields of urban planning, public health, medicine, transportation, environmental science, business, biology, national security, even maritime shipping. I find this impact truly fascinating and exciting to be a part of and I really do appreciate and thank you for letting me share it with you.

Joel Caplan: Can I answer any questions?

Erin Farley: Yes, thank you Joel. We'll see if anybody who's attending will type in a question. As we're waiting, I did have a quick question for you myself. I was wondering, talking about the potential risk factors and sort of that kaleidoscope, is there a standard number of risk factors that are just sort of ... like you were saying, parking lots, gas stations, liquor stores, laundromats, is it just this automatic sort of standard of risk factors that can be utilized across different sites and locations? Is there anyway also to expand that or add if there's ... For example, I'm making this up, but bike share locations. If it's not in there but you see this crime at a location and then you're able to somehow surmise that it's because that location is where a bike share is and there's lots of bike thefts or something. Can you add that as a risk factor? Does that make sense?

Joel Caplan: Yeah, absolutely.

Erin Farley: Okay.

Joel Caplan: It's a great question. So the goal of the risk factors as inputs is to essentially model the landscape. So in cities or towns that have bike share, this would be an important risk factor that would be something you would want to have as one of the features that might be attractive of illegal behavior. We tend to have a kind of a starter list, or kind of a go to list, of risk factors that we don't want to forget about when going from town to town or doing different analysis, but they're not all relevant for each town. For example, Ocean City, New Jersey, is a dry town. They don't have liquor stores or bars so we wouldn't use that data. But other towns that do, we would certainly use that and we would also use bike share locations in the same way that we might use bus stops or ATM machines for one town but not another.

Erin Farley: Okay, thank you.

Joel Caplan: Sure.

Erin Farley: Let's see. I don't see any questions. Jason, do you see any questions in case they're going to you and not me? Let's see if Jason's there. He's on mute.

Joel Caplan: So while that person's writing the really good but longer question, I will say that risk terrain modeling when it started about nine years ago, it was done
manually, and I’m sure many of the attendees on this list, many of you might have a statistical background or a GIS background or a practitioner background within the justice field and a lot of these ... This risk terrain modeling analysis basically began by doing the analysis manually, using off the shelf software, running statistical analysis, using GIS, and it required a variety of different skill sets to kind of produce the analytical results. The software has made this a bit easier and arguable less tedious but all of these resources and kind of the engine under the hood, is all available for review and scrutiny which adds that level of transparency that I just want to kind of reiterate.

Erin Farley: Okay, we do have a couple of questions and as we actually ... before I forget as well, you may launch the poll too for those of you who are here but while we're in the process of doing that, we do have a couple questions. So let me see. We have, other than policing, what other uses do you see and then this might fit with the next question as well that is, can you seek the crime types that you have seen with similar spatial attractors?

Joel Caplan: Sure, let's start with the second question. Crime types with similar attractors. A lot of crimes that have been studied by me personally, usually relate to either property or violent crimes. Property crimes tend to be somewhat distinct. You have theft from motor vehicle or motor vehicle theft, which could have very different risk factors, although they both relate to cars. Burglary has also been studied and a lot of these risk factors tend to be things that you might not initially think of, such as proximity to schools or if the common assumption is parking lots or parking meters, you'd kind of be surprised that the risk factors tend to be things along the lines of schools or shopping centers or malls, not specifically at them, but sometimes nearby, which are places that people drive, as a destination, to pass the particular targets which increase the risk well beyond the immediate location of these facilities.

Joel Caplan: Other risk factors, again, these are not generic risk factors. You really do need to model the patterns of crime within a particular jurisdiction, but things like robberies or shootings that relate to a drug trade could have similar risk factors such as in Atlantic City, where convenience stores, rooming houses, and vacant properties kind of created this risk narrative as well as attractive quality, especially where they co located.

Joel Caplan: Other things in addition to policing, we see it used with cancer research, we have seen it used with looking at piracy on the Earth's oceans, we have used it in epidemiological research, we've looked at disease outbreaks, it's been used for child abuse and child maltreatment, as I mentioned, but there's also some researches looking at suicide. Trying to think of a few other ones. I've seen it used for pollution control, for traffic crashes, pedestrian crashes, pedestrians being struck by motor vehicles as well. Those are the ones that come to mind off the top of my head. Hopefully it answered the question.

Erin Farley: Okay. Great. Well there is one more question. Oh, sorry.
Joel Caplan: No, I'm sorry. I saw one question, maybe it's the one you're about to address.

Erin Farley: This one is, how do you work with jurisdictions to poll and clean the data that is loaded into RTM?

Joel Caplan: Well, increasingly risk terrain modeling and the RTM DX software has been used by a number of practitioners that I'm not involved with at all. But when I do work with agencies or when agencies ask me for my advice or opinion, I usually suggest that they begin with thinking about the problem issue that they want to address. Obviously the risk factors for cancer or disease research could be very different than risk factors for bicycle theft or robberies. But even robberies and shootings could have potentially different risk factors. So once they identify the problem issue that they want to focus on, then the process is usually a matter of doing a basic literature review, whether they have university researchers can certainly access libraries and databases of journal articles but it's increasingly easier to do it without that kind of access, with Google Scholar and think tanks and kind of reputable research entities out there like, crimesolutions.gov or the Campbell Collaborative or other research areas that have white papers that are available to kind of get a sense of what risk factors might relate to your problem of interest.

Joel Caplan: Once you have a general idea of what risk factors you want, then you collect the data that relates to it and most of this data is publicly available. Locations of bars and liquor stores and fast foot restaurants and pawn shops, these are all public record. If they're not available through your immediate connections or relationships with other government agencies, some cities have them on public data portals or GIS data clearing houses and all of them are usually public record, so they could be obtained through [inaudible 00:32:34] requests and that's really the only data that's needed. Either the outcome event, such as crime incident locations, or risk factor data, which is usually business or retail infrastructure and usually readily obtainable.

Erin Farley: Great, so a few more questions popped up. One is, how frequently is the model validated? Does validation occur across different applications?

Joel Caplan: Good question. So a lot of cities or a lot of people using it, we kind of encourage them to do their first model or kind of practice by using a year's worth of data. A year's worth of data will kind of produce a forecast of essentially, a year's worth of risk for the next subsequent year and generally speaking, that will ... doing so will kind of control or look for generalities with regard to risky places while controlling for seasonality or other variations. On a more tactical or strategic basis, such as in Atlantic City, where they're using it to deploy police patrols, they redo the model monthly and that allows them to kind of stay ahead of the changing patterns of crime, which is worth noting that these patterns should change and are expected to change because the intervention strategies are expected to have an impact and where there's an expectation of an impact for deterring crime at the high-risk locations, we would expect the patterns of
crime to change in response. So they repeat monthly and that kind of allows them to kind of stay ahead of the problem.

Erin Farley: Two related questions. One is, has any RTM been used for sex offenses and then the related question is, have you found that sex offenses do not occur in the neighbor of, I guess maybe in the neighborhood of schools. It says neighbor but I think that meant probably meant neighborhood of schools.

Joel Caplan: That's a good question. I actually received that question a couple of times over the recent past. I have not studied sex offenses directly with risk terrain modeling but I do know that there's a few published, or few researchers who have looked at it. I don't know who they are or where they are off the top of my head but I can try to track the ones down that I'm thinking of and I believe that sex offenses, in this case, they would need to be looked at by type. You can have a variety of different sex offenses beyond the kind of traditional or kind of assumed kind of street crime, but a number of different sex offenses ranging from domestic violence all the way down to offenses amongst strangers on the street to date rape or on college campuses, all of which could have their own environmental attractors and make some places riskier than others. So I don't have any firsthand experience of studying it but I do know that other people have looked into it and if you'd like to email me, I'd be happy to follow up with that information if I could find it.

Erin Farley: Great, and one more question, do you see this as being a partner with things like the traditional hot spot policing, since it seems like that might help us to identify initial areas in which an analysis would be needed?

Joel Caplan: Yes, absolutely. In fact, we've done some research to show that some of the best forecasts actually come from a combination of high-risk locations and hot spots, essentially. That is, hot spots tell you where crime is happening now but it also assumes that it's not going to move and what we know is that crime does move and it does move and the patterns of crime do change, especially in response to successful intervention strategies.

Joel Caplan: So if you use risk terrain modeling in combination with other methodology, such as hot spots, it allows you to focus on the areas that are of greatest risk now and also anticipate the areas of greatest risk where crime might emerge or displace and one way to think of it is basically, hot spots show general, places where people generally commit crime over and over again. If the highest risk locations also exist in these locations, then you focus on the high-risk areas within the hot spots and you'll have the best predictability. Essentially, risk terrain modeling diagnoses the underlying attractors of hot spots and then finds other similar places where it's likely to emerge as well. So the interaction of hot spots and high-risk places has very good predictability and we've written on this and I would certainly encourage it.
Erin Farley: Great, thank you. I think there's one more question, what are your strategies for getting administrative buy in?

Joel Caplan: That's a good question, I should probably ask everybody on this list. It varies, it really depends who the stakeholders are. I think it's fair to say that policing practices are often embedded in perceptions of officers who have been there for a long period of time and believe that they understand the problem and understand the way that they should be addressing it. A variety of stakeholders are usually going to receive this differently.

Joel Caplan: For example, the planning departments find a lot of value in it and usually buy in quite quickly because of the say, 5,000 or 500 or even 20 vacant properties or abandoned properties that they have in their city but they only have very limited resources. Rather than randomly selecting one to focus on at any given moment in time, it allows them to prioritize their efforts and also empirically support the actions that they're taking which otherwise, could seem arbitrary. It's a complicated question and I don't really have a simple answer other than offering to demonstrate how it works and demonstrating that there's predictive validity but also more importantly, that the results from the analysis, the output from the analysis, really can be actionable and useful for decision making processes and that in many ways, it supports what they want to do but gives them an empirical basis for doing it as well as for prioritizing resources.

Joel Caplan: From a policing perspective, it also gives them an ability to measure their success and get credit for crime not occurring, which tends to be the opposite of traditional measures of police performance such as, stops, arrests, or citations, which kind of demand that crime happen first, which necessitate the citation, the stop, or the arrest. But risk terrain modeling allows for kind of pre post testing for actions intended to reduce risk and ultimately reduce crime, while also assigning credit for that effort.

Joel Caplan: Depending on who you're talking to, a number of these things, whether it's multi stakeholder engagement, evidence based deployment of resources, new measures of performance, or simply a pilot project to show that the forecasting is accurate and if they go to these places, they're more likely to be efficient in utilizing resources, all could be ways to encourage buy in.

Erin Farley: Great, thank you. I was wondering if you could provide your email address if anybody had any additional questions or were particularly interested and wanted to follow up regarding the sex offenses issue that you were speaking about. Do you have an email at Rutgers that people might be able to reach out to you? I don't believe we usually have email listed with our webinars.

Joel Caplan: I just sent my personal email to all of the participants, hopefully received it.

Erin Farley: Oh wow. Okay, great. Thank you so much. Oh there it is, I see it. Okay, thank you. So I think that was our last question, so again, I want to thank Joel, as well
as everyone in the audience for joining us today. We hoped that you enjoyed the presentation and if you obviously have any questions, you can follow up with Joel. You can also reach out to us at JRSA for any questions that you may have regarding webinars and keep an eye out for future webinars and thank you. Thank you Joel.

Joel Caplan: Thank you very much Erin. Thank you everybody for your time.

Erin Farley: Take care.