

Springer Browne: This was my first day on the job as an EIS field officer assigned to the US Virgin Islands Department of Health. A condemned hospital with a padlocked door. In September 2017, two weeks before I traveled to Atlanta for my first EIS interview, Hurricanes Irma and Maria made landfall on Saint Thomas, St. John and Saint Croix in the US Virgin Islands. These Category 5 hurricanes delivered sustained winds over 185 miles an hour. Homes, hospitals, schools, infrastructure was destroyed. I still remember when I did my remote interview with my future supervisors, Esther, and Jay. They were in that condemned hospital. Behind them, water was dripping, the lights were flickering, and the walls were damaged. So, this is my office. I had two years to make a positive impact in the US Virgin Islands. I was their first EIS officer. I was also the first veterinarian assigned to their Department of Health, and I had no lab, no office, no resources. So, what was I going to do? I started by driving around and talking to people anytime I could get a chance. I talked to the territory that wildlife managers, police officers, conservation groups, animal shelters, federal and local government. A lot of people and a lot of places and I realized the Department of Health had an established these relationships in the one health aspect, so there was endless potential for collaboration. The next thing was to figure out what was I going to work on. And there's a lot of animals in the US Virgin Islands. I went for leptospirosis and rabies. Leptospirosis had been recently detected right after the Hurricanes. It's a well-known waterborne pathogen and there was no animal surveillance data on the reservoirs. Rabies was well known to exist just 100 miles West in Puerto Rico, never been detected outside the US Virgin Islands. So why not try to prove it isn't there? The next thing was to figure out how was I going to do this. So, I tried to focus on what I had rather than what I didn't. Now that condemned hospital, I found an unpad locked door and went in there and I nicknamed it the mold lab. I cleaned up one of the offices and sure I had to wear an N95 mask just to walk in there, but it had power, air conditioning, and a lot of abandoned equipment I could use. The mold lab was now our animal surveillance lab. And I was lucky the US Virgin Islands Department of Health had obtained multiple grants of crisis funding after the Hurricanes. One of those over 20 grants was for leptospirosis, and a sliver of that funding was for animal surveillance. So I grabbed field gear so I could sample as many animals we could, and we sampled everything rats, bats, goats, pigs, sheep, Mongoose. And no visit to Atlanta went wasted for Tuesday morning seminar or for the EIS conference. I always came back with three bags of gear from the CDC rabies group. The next was to build our expertise and that for that we leaned on our collaborators in the middle there that's Ari, a USDA specialist in Mongoose research in the Caribbean. On the right, that's Clinton James from the CDC rabies group. They led trainings in bats and rodents. The CDC LEPTO group even got me into those deep dark labs over on Roybal so I could get extra training for rodents. By the end, I had arranged training on all three islands for twenty local staff and nine different organizations. They were trained in zoonotic disease sampling, personal protective equipment, venipuncture, basic surgery procedures and lab processing. The next clue is planning, or as I like to call it, paper. A lot of paper to set up 7 field projects. Let's not talk about the standard operating procedures, the project proposals for the ethics. I lean heavily on the CDC so we could do the work, but locally I needed US Fish and Wildlife Service, National Park Service, USDA, Athists, the Virgin Islands Department of Agriculture, the Virgin Islands, Department of Natural Resources. All those groups needed permits for us to do our work. But I was lucky because most of those people that I needed to hand over that document to had been in our training. If they hadn't, their staff definitely had, so I actually went over and just handed them the permit. So, we got our permits accepted within weeks rather than months. For logistics, Virgin Islands is tough. Three islands separated by water. Travel is by seaplane or a boat. This is where I really leaned on the EIS program. Every time I left Saint Croix went to the other islands. That was a deployment. I logged 27 deployments while I was out there. Taxis, Seaplane, car ferry, and I always had to get an exception to use Airbnb because all the hotels were destroyed and the ones that were still standing were definitely above per diem. And now the fun part. Operations. Everyone likes operations. On the right, there's Hannah from the US Department, USVI Department of Health. She helped me in a lot of my work. We were grabbing bats out of abandoned rum factories and every time I'd go out, I was usually tagging along with the University of Virgin Islands or the College of Staten Island. They were already doing this research, so I'd hop along while they did their ecological data. So get this

sorted, I'd grab urine and blood. Now the mongoose. We were always hiking a remote spot. And we are always taking out these big Mongoose cages. We'd plant twenty of these every time. And a lot of these. Vienna sausage. I didn't count how many we used. But we placed 886 of these traps at 41 field sites. Some were beautiful like this, with Pelicans crashing into the water just 20 yards away. Other times we climbed trash dumps. But we collaborated a lot with conservation groups because Mongoose are an invasive species that are highly detrimental to endangered sea turtle nests. They loved us to come out there and gave us access to the land and the National Park Service and the USDA Wildlife Service. They were already going out there to catch these animals. We tag along and grab our samples. Local veterinarians would just call my cell phone anytime they had a leptospirosis case I'd run over and provide free testing. I would get samples to build up our genomic database. We worked with the Virgin Islands Department of Agriculture and USDA First to perform surveillance of pigs, goats, sheep and cows and the only meat processing plant in the territory. Now for rodents, we deployed a Leah height volume of rodent traps every day for two weeks. At 1800 of these things out in eight days of field work across the territory and here's Department of Health staff, Val and Quanda trying to get them ready for the morning. Here Leah is doing a sterile removal of an eraser set head sized kidney from a 5-gram mouse while standing in a mango farm. And this is an important time to bring up our field laboratories. Now our field laboratories, sometimes we're just plastic boxes that were on Saint Thomas and Saint John. And we just go out, travel out in the field. Here you can see Nick from LLS. He's spinning blood outside of a car in the middle of the night. But a big part of our success was the collaboration with outside laboratories, the USDA Agricultural Research Service in Ames, Iowa. They had an experimental leptospirosis media that they provided for us and this fastidious bacteria. Are really hard to culture. Just with this field kit and the wonders of overnight shipping, we were able to get over 95% of the leftover that was detected by DNA. We got the culture. The best part is they sent the culture back over to the CDC Lepto Lab. They used those unique species to build up their serology testing capabilities for people in the Caribbean. And of course, if you really want some help, you gotta call an EPI aid. These are my classmates, John and Alexandra, along with Nick from LLS. We were prepping the night before for a field site so remote on Saint John that we had to hike in in the dark down down a rainy mountain slope for three miles. Take a nap on the beach today while we waited for the Mongoose to find these tasty Vienna sausages. Perform surgery on a piece of driftwood on the beach. The best part? The National Park Service picks us up in a boat. Boat so we don't have to climb all our gear 3 miles back up the hill. And I've brought up a lot about how all these collaborators helped us. And I felt a lot like Tom Sawyer. You know, when he gets busted by Aunt May and he has to paint the huge fence somehow, he convinces all his friends that painting is really fun and they do it for him. Like when I got my buddy here, Ben, who's a former Division One college wrestler, to come observe us as we sampled at the bottom of this large hill. He was kind enough to help us carry the cages out. And on the right, that's my lovely wife Steph, who would frequently come out to help so we can spend some quality time together setting Mongoose cages. And none of this works. This field bag and my cooler of samples without that one Health Network and collaboration. And sure, we showed that Mongoose don't have rabies in the USVI. We also have a genomic database now that can be used for source attribution of human infections of leptospirosis. But look at this author list. 36 people from 18 different groups and we couldn't have done the work without every single one of them. The real output of these projects was the relationships we established between all the organizations in the US Virgin Islands and the capacity always existed. We just need to build those bridges. Six months after we started all it was over. COVID hit and March 2020 I was assigned a supervisor of the surveillance operations for COVID-19 in the US Virgin Islands and supervisor for the Saint Croix Drive through operations. How do we respond to this build capacity for this new pathogen? Well, I use pieces of paper to figure out how it was all going to work. And what started as just big posts and notes on the wall with an epi aid like assist from my classmate Sharon and Jordan. Ended up with an advanced surveillance reporting system that all the local staff could use and it was developed in one week. It's still used today. For logistics, we still had to keep track of supplies and movement. And for expertise, we leaned on local doctors. This is Doctor Francis from Saint Thomas,

showing Department of Health staff Lisa and Cosme how to do a nasopharyngeal swab. Cosme on the right, He's in the National Guard. He drew up all our plans for our drive through operations. And when we needed a fridge to hold our samples before they could be moved over to the main lab, we walked into the mold lab. Found a perfectly good fridge with 2 1/2-year-old food in it. Disinfected it and brought it into our mobile trailer. And when we needed a place to process, preprocess our samples in Saint Thomas before they could be flown over on a seaplane to Saint Croix, we made it. "All right, ready" This is. "That's not what they do" Did it work? "It is not leaking." That was a Christine, a former LLS officer testing the stability of Glass Media in a tube. And all those days of hot sun and doing surgery in and out in the field helped a lot for those long drive-through sessions. All that training for the Department of Health staff for zoonotic disease, sampling all that sweat was now helping save lives, and the Department of Health was better able to respond to COVID because of our zoonotic disease projects. So, I encourage you to focus on the relationships you build with your local collaborators and how when you are helping them, they are also helping you. You can have a lasting positive effect on these communities with your work and expertise, whether it's a just over 50 mile away deployment of three days or a two year stint on a tropical island. Thank you.