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Bug-Eyed View of the Insectary and Quarantine Facility

Bugs are not the first things that came to mind when I think of UCR, and they are definitely not the reason I chose to go to this school. Nevertheless, bugs are a major part of UCR, which has one of the best entomology departments in the UC system, and perhaps the world. Entomology is a biological science that studies “insects and their relationship to man, other organisms and the environment.” It has many practical applications that have to do with “our health, our food supplies, and our environment.”

Chapman Hall, the building next to the Insectary and Quarantine Facility at UCR, is an old and intimidating looking building where the study of entomology takes place. The Insectary and Quarantine Facility is a place for researchers to study organisms “in enforced isolation and restriction of free movement” so as to prevent “unwanted organisms from spreading (diseases, weeds, pest arthropods, invertebrates and invertebrates).” When I first visited the place, I could tell that it is full of knowledge. The building gives off a certain vibe that the education done there is serious and that the people who study there are smart and mature. When I walked up to the door of Chapman Hall, its tired wooden doors highlighted its old age and gave off the vibe that it guarded secrets from freshman like me. I opened the door with the non-broken handle and walked inside. The first room I saw on the right was a room full of glass beakers, jars and

chemicals. The building seemed empty except for some people, who I assumed were graduate students.

I was standing outside room 108 at Chapman Hall waiting for my tour guide to take me to the Insectary and Quarantine Facility. I was supposed to meet Mark Hoddle, a biological control specialist in the department of entomology at UCR. As I stood there, I tried to look inconspicuous in the hope that I would look like a typical grad student, but Mike, a staff member in the Hoddle lab who works in the Insectary and Quarantine Facility, noticed me as he was walking downstairs. “Are you Jackie?” Mike asked. I was surprised by how happy he was to see me; I expected him to look distracted—like he would rather be doing something else more important. Mike Lewis is a tall white male, with short spiked brown hair, a medium build, and a slight slouch. He looked very friendly and personable, not what I expected a scientist or researcher to be. I thought people who did research in a place like this would be geeky. Mike was wearing a casual blue collared short sleeved shirt and khakis. He looks like a normal guy, maybe a father in his 30s with two kids. He is a staff member at UCR and has been working there for about 4 to 5 years. He came up the stairs and he walked me into room 108. Similar to the other room, there were beakers and science tools on the tables, but it was more organized and clean. As I walked in, I saw Mark Hoddle walk out of his office in the corner of the room. He was average height and build, white, and he looked like he was in his 40s. He was wearing a casual short sleeved shirt, shorts, and hiking shoes. He seemed very interested in what I was doing. But since he had another meeting, he had arranged for Mike to give me the tour of UCR’s Insectary and Quarantine Facility.

As we were walking to the Insectary and Quarantine Facility, I started thinking about the pictures of the building I saw on the website. The first things I noticed about the Insectary and

Quarantine Facility, or the I & Q, were the many glass greenhouses outside and the green rooftops above the pale yellow stucco walls. Although I was not amazed by the building, there is still a certain mystery to it when I walk past it, like “I wonder what goes on inside there?” Mike even agreed by saying he likes this building because of its “mystery”; “it’s not like the typical classroom.” I knew for sure that the building itself would not have sparked my interest before, but as we started getting closer and I was getting a better look, I started to get more interested. As I walked by the greenhouses, I saw that there were little plants sitting on tables with yellow tags hanging from the ceiling, which I assumed labeled the plants and held data on them. I wondered what kind of information they were getting and what it was for. When we went inside, I thought the building felt very cold in that there were only walls and doors, no decorations. There are a lot of doors and everything is plain white with green signs next to the doors naming each room.

The first room we walked into was a grey room called the Organismal Room. There is a vent and “the typical science stuff”. There are cabinets and what looked like refrigerators, but are actually temperature controlled cabinets where they placed organisms. At first look, the I & Q seemed out of reach and that I could never do something like this, ever. But once I went inside and saw the beakers and chemicals and other tools that were similar to those I used in high school for my biology, chemistry, and environmental science class, I began to feel more connected. On the corner of the counter were small cylindrical containers that held leaves and insect eggs. Mike began talking about how this was one of the things he was doing in his research. I looked quickly at the eggs, noticing their pale yellow color and how they looked like a small cluster of sand. I resisted the urge of saying “Ew” and quickly turned away. He said that the researchers would gather samples of insect eggs on leaves from the field and put them inside

the plastic cylinders in this room to see what insects would come out of the eggs. This room was for “getting ready” the insects that they gather from the field. There they monitor pests, collect eggs, record the types, and track them. An example of what he is working on in this room is the Glassy-Winged Sharpshooter, which is an insect that can spread bacteria that can kill grapes and other important plants in California. With the Glassy-Winged Sharpshooter, they found a parasitoid that would lay its eggs inside the Glassy-Winged Sharpshooter’s eggs and when the parasitoid’s eggs would hatch, its grubs or larvae eat the Glassy-Winged Sharpshooter’s eggs. The parasitoid (which is a wasp) would later emerge from these eggs instead of a Glassy-Winged Sharpshooter. I thought about how cool that was: it’s so much easier than chemical pesticides and probably less harmful to the environment and to the people eating the fruits.

The next room, a Rearing Room, he took me to was especially strange to me and it looked as if it came from an alien sci-fi movie. As we were walking down the hall to get to the room, I noticed that all the lights were off except for a black light on the side that glowed a weird purple color. It felt cramped, creepy, and cold. I asked him why the lights were off and he said that if anything were to escape, they would go to the black light and therefore they could find the bugs more easily. First of all, the room is about the size of a small walk-in closet. There are counters and wired shelves and on the counters are these little white, see-through tents about a foot and a half high with three small plants inside. The plants look delicate, young, and especially out of place in their little black, plastic holders. It reminded me of something the scientists from Jurassic Park would do in their research. “You see those?” Mike motioned to the plants behind him, “Over here I think they’re studying the Asian Citrus Psyllid. It’s become a big pest problem.” The Asian Citrus Psyllid carries a disease that gets transferred to and kills citrus plants when the insects suck on the stems and leaves. If the disease hits California, the whole

citrus industry can be destroyed. One of the things that the facility does is that they find out what the pest is, they then find a parasitoid that could take care of the pest problem, and then rear them up in the building in the little tents that hold the plants. I looked carefully at the tent closest to my left and noticed, after a closer look, a lot of little bugs climbing up and down the stems. They look like airy beads with legs that I could easily kill and not think twice about their importance.

Mike began to talk about how guarded and protected this facility is. He mentioned almost proudly, "It has the security government agencies need. It's locked down and it meets all of the federal regulations." The reason why it is so protected is because this facility gets shipped insects and pests from all over the world for the researchers to study; they get projects for agriculture as well as forestry and urban areas. Since it is a quarantine facility, it is only open to the staff, graduate students, and researchers. There are three levels or stories: The first two levels are for general insect rearing, and the third level is quarantine for sensitive insects and pests, like insects not from this area. What makes this facility so unique is that it is the only one around, besides one in central California. Many important projects get sent here, "So that is what makes the Entomology program here stand out." I was really surprised by how important this facility is and how vital it is to society; I never thought UCR would have something as valuable as this facility here. This facility is probably "the largest and most advanced in the USA and arguably the world." They get funded by the Federal and State government as well as grower organizations, and the CDFA, the California Department of Food and Agriculture to do projects not only locally, but sometimes even internationally. If the facility wanted to do research on something, they would propose a project and the CDFA or some other agency that has research money, the researchers could be rewarded with grants for good and important ideas. An example of a project they are doing is research on the Gold Spotted Oak Borer from Mexico and Arizona that is being

supported by money from the USDA Forest Service. The Gold Spotted Oak Borer was first found in San Diego Co. by the CDFA. They saw that the insects were attacking the coast live oak, canyon live oak, and California black oak in the Cleveland National Forest. The Gold Spotted Oak Borer is killing off oak trees and, therefore, has become a major pest, so researchers in the I & Q are studying on how to get rid of them. Mike's favorite part of the facility is the feel he gets when he goes inside, "it's like being in a military compound. Especially the 3rd floor, it's really secure here." The reason why it's so secure is because "it's a quarantine facility so, you know, like if they wanted to keep insects from other places safe," they know they wouldn't escape here.

At first I was intimidated and overwhelmed by how much information that the facility holds but now I realize that despite the cold, undecorated halls and strange tents full of bugs, the place is really amazing, important, and most of all relatable; without this facility a lot of our agriculture would have pests and we would have food shortages. Although Mike was not the mad scientist I expected him to be, he still had that passion of one; I could tell that he was passionate especially when he said he thought how "cool it is to know that you're working to help make a difference in the world." Although I have gained so much more appreciation and knowledge on how important the Insectary and Quarantine Facility is, I still don't like bugs and that will never change.

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