

## A Gecko's Life

### Introduction:

From a young age, reptiles have fascinated me in same way most people find puppies adorable. Some reptiles' appearances may be off-putting to look at, but others are very cute and become common house pets. Leopard geckos may not be familiar to some people, but they are very common pet reptiles due to their minimal maintenance and docile behaviors. Due to my curiosity over my gecko, I have decided to base my portfolio off of him and look further into his world.

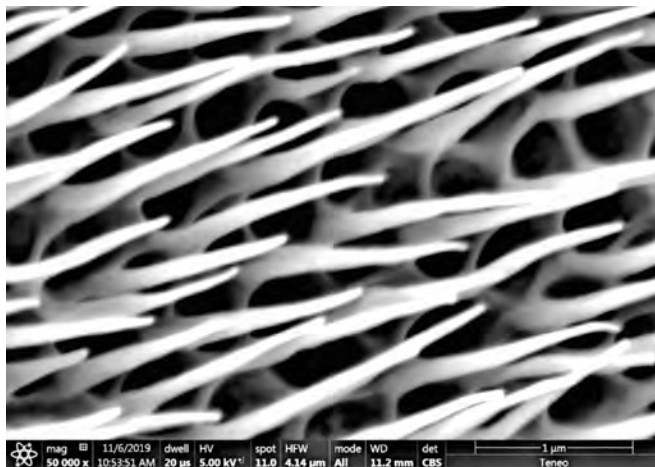
### Mealworm:

Mealworms are an important part of my gecko's diet due to his old age and inability to catch live crickets anymore. Mealworms can be bought easily in pet stores and are great for reptiles due to the added nutrients that the manufacturers put in. This image taken by the SEM depicts the underside of the head of a mealworm. I have colored the mouth of the mealworm purple in this image to better highlight the unusual shape of it.



### Gecko Eye:

A cool feature about geckos and other reptiles is that they often shed their skin. This image taken by the light microscope depicts the inside of the shed skin from around my gecko's eye. I have edited the color of the image to better depict the indents made by the shape of the gecko's bumpy skin. The coloring also enhances the differences in the skin's colors in certain regions due to the gecko having spot colored skin like a leopard.



### Gecko Skin:

This is another image taken of the gecko's shed skin, but much further zoomed in and taken by the SEM. I found this image really fascinating since the skin looks similar to hair/fur rather than smooth or bumpy like I would expect. The skin also depicts small holes that the hair-like structures stem around which I found very interesting.

## Exterior Components of A Pointe Shoe

Gabby Shatz

I had danced since I was three years old. However, I had only danced en pointe for the past three years. Pointe shoes allow dancers to balance on the tops of their toes during performances. However, dancing en pointe is dangerous as it is easy to misuse the shoe and severely damage your foot or ankle. A ballerina will use elastic and ribbon to stabilize the pointe shoe around her ankle and foot to prevent injuries. I decided to observe aspects of the pointe shoe that allow a safe experience from both an optical light microscope and a scanning electron microscope.

The pointe shoe has many interesting exterior components. On the outside of the pointe shoe there is a drawstring that a dancer can pull in order to tighten the shoe around her foot. The drawstring seems to be made from interwoven fabric in a braided fashion to form a cylindrical elastic. This is the edge of the drawstring under an optical light microscope set at 750 micrometers.

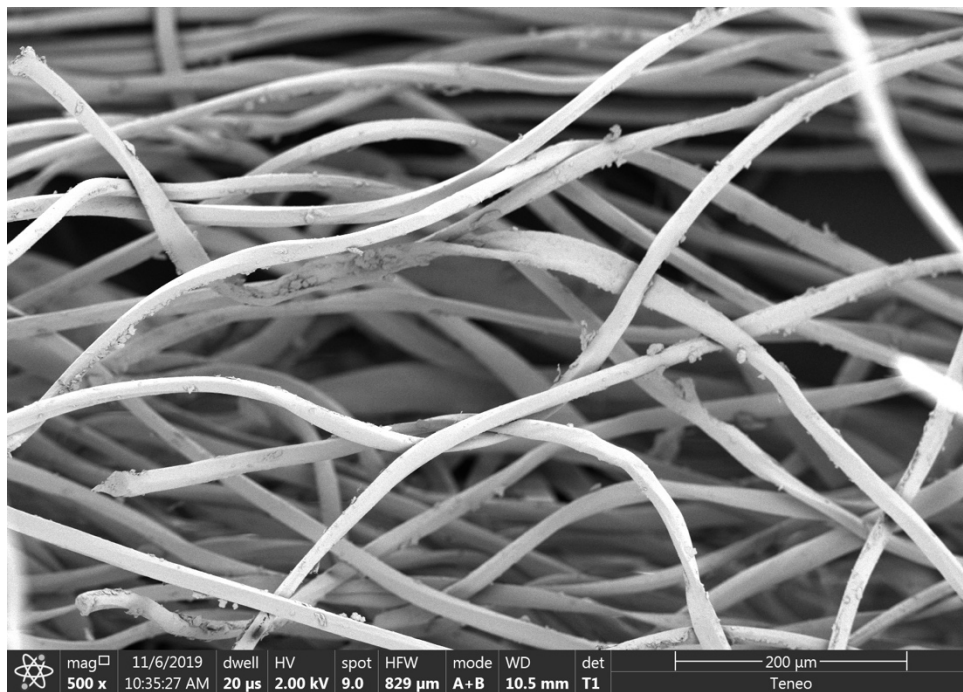


## 2019 FYOS: UGA at High Magnification

Another exterior component, the elastic around the ankle, allows for stability so the shoe does not come off of the dancer's foot. The elastic is made of interwoven and stretchy string/fabric that forms a pattern that also appears to be braided. However, unlike the drawstring, the elastic is in a flat rectangular shape. This is the elastic of a pointe shoe under an optical light microscope set at 500 micrometers.



The elastic from a pointe shoe is complemented by the ribbons that also go around the ankle. The ribbons add more stability while establishing a cleaner look to the shoe as it has a shiny outer side. The ribbons differ from the drawstring and elastic as they are not made from stretchy material. These are the frayed ends of the ribbon under a scanning electron microscope set at 200 micrometers, and the particles found on the strings are made up of zinc, which is what brings about its light pink/white color.



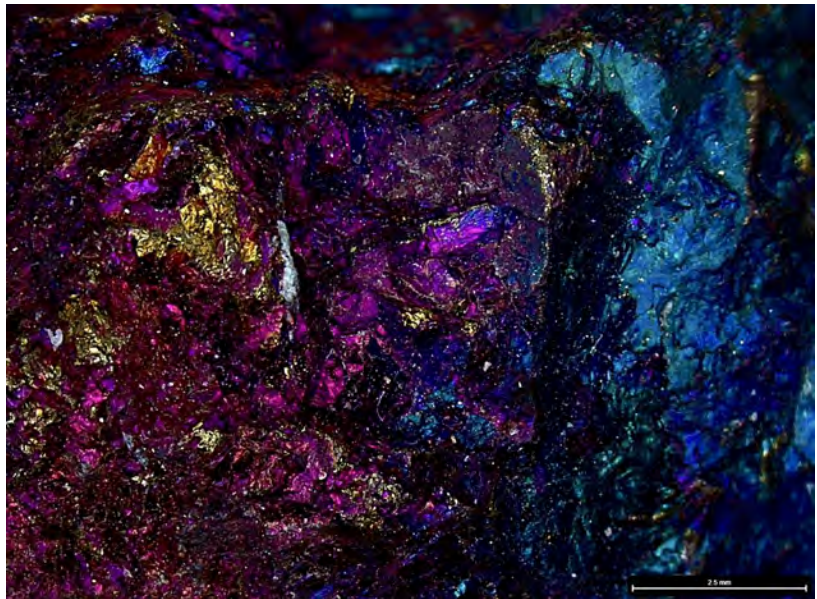
## Ava Castro's Microscopy Portfolio

### Introduction:

For my portfolio, I had the idea to use gems, crystals, and minerals as my theme after working with the DVM6 microscope on the first day of class. We got to see different samples under the scope and take images, and one of the samples was a blue crystal which looked gorgeous! I collect gems and crystals and combined with my roommate, we have a large collection. I think minerals and gems are truly some of the most beautiful things Earth creates, and I also find it interesting how some gems and crystals hold different meanings. Metaphysics is a type of philosophy that focuses on the connection between nature and the mind. For my portfolio, I selected some samples from my personal collection and also included a rock I found at the Botany Greenhouses.

### 1. Peacock Stone

This first stone is my favorite image due to the amazing color! This rock is from my personal collection, and its common name is a peacock stone. Peacock stones are actually Chalcopyrite, and they contain pyrite, which is the common "fool's gold". This stone is metamorphic. Some believe rocks and gems have healing powers and can affect a person's mood and "chakras", which are inner levels of energy. Although it's hard to tell if these gems can actually affect a person, each rock still holds some level of importance. Other than its obvious beauty, peacock stone is supposed to uplift a person's attitude and bring joy. At high magnification, you can see the individual flecks of shine and iridescence in the rock.



### 2. Malachite

Malachite is my favorite stone! This stone is also from my personal collection. Green is my favorite color, so I am always drawn to malachite. Malachite is made mostly of copper and

carbonate hydroxide. Malachite always has a range of green bands or swirls, usually both. This rock is supposed to help an individual personally heal and assist in changes. It is considered a

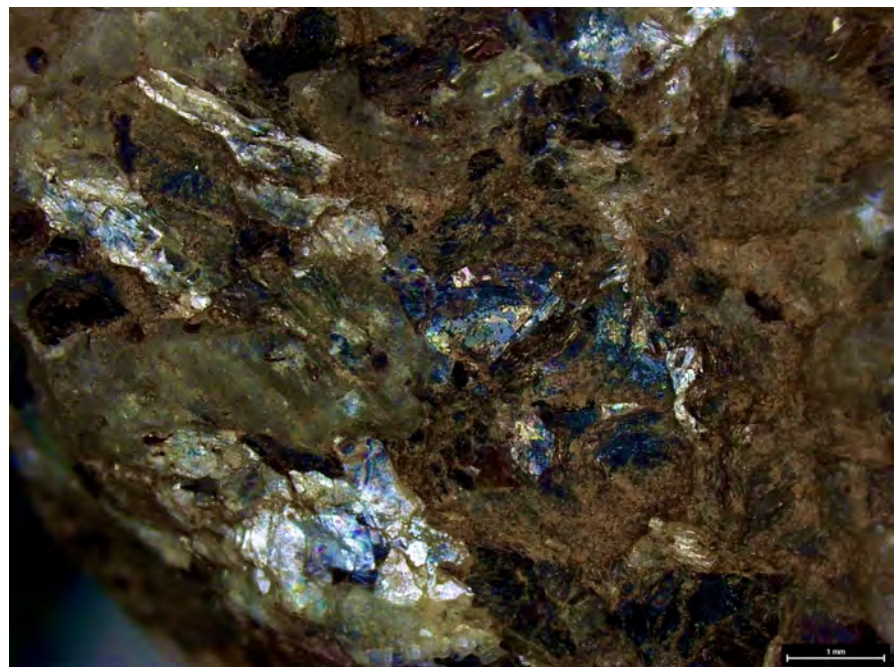


protection stone and can aid someone in preventing negatives. Under the scope, you can see the intricate bands in the rock, which remind me of rings in a tree trunk. You can also see in the large dark green band details inside and small scratches.

### 3. Schist

I found this rock on the ground of the botany house, in the tropical plant room with two stories. It caught my eye because it was very shiny and lighter compared to the other rocks we see around on the ground. After some research, I found out in our region of Georgia there are igneous and metamorphic rocks. This rock looks similar to schist, which is a metamorphic rock.

Schist often contains shale, quartz, mica, and feldspar. Because schist is a mineral instead of an ore or crystal, it does not have metaphysical meaning. Instead, schist is used for industrial purposes like building. Under the scope we can see the bits of silver shine, and when edited we can see the shine's rainbow iridescence. You can also see the different colored spots, textures, and dirt.



#### 4. Sanskrit Jasper

Sanskrit jasper is a very beautiful stone with very small details. Under the scope, we can see these small patterns, lines, and swirls up close. This is also from my personal collection. The stone was named sanskrit jasper, because the markings and patterns in the stone resemble the



written language of sanskrit. Therefore, they are believed to hold ancient energies and philosophies. This stone is supposed to bring magical energy and wisdom. Jasper is a very common stone, because it is a type of stone that contains more than one mineral, usually opaque. There are many different types of jasper.