

**Kayla McKnight**

**Introduction**

Fall is my absolute favorite season of the year. From the smells of pumpkin spice, to the colors associated with this beautiful season, there is nothing else I enjoy more in the world than the fall seasons every year. While walking around UGA's campus I really find myself in awe when observing the trees changing colors from green to red and yellow. Fall is also my favorite season of the year because there is always some kind of fall festival in my hometown. I vividly remember doing things as a child like apple-picking, and pumpkin carving that initially sparked my interest and eventually became a tradition every year.

**Blue fiber**

This image is related to the wonderful season of fall. This fiber belongs to an article of clothing that keeps you warm during the chilly mornings of autumn. I also made an observation when I looked at the tag of my sweater and discovered it was a nylon fiber. You can see the elaborate detail which looks similar to a hair follicle. The string of purple really stands out in this magnified image.



**Marshmallow**

This image is usually used for making s'mores by a campfire or could be a nice topping to add in your hot chocolate during the chilly fall days. At high magnification you can see all the elaborate details of a marshmallow with the naked eye. I used an optical light microscope to capture this image. You can see that it looks like some type of frost or snow we would see on the ground during the winter.

2017 FYOS  
UGA at High Magnification



### **Pink Leaf**

This image is my particular favorite because of all the detail you see when the image is magnified. You typically see these everywhere during the fall season. I personally see them every time I step outside and walk around campus. I also used an optical light microscope to capture this image of a leaf. At high magnification you can see the cracks and also tiny white spectacles all over the leaf.

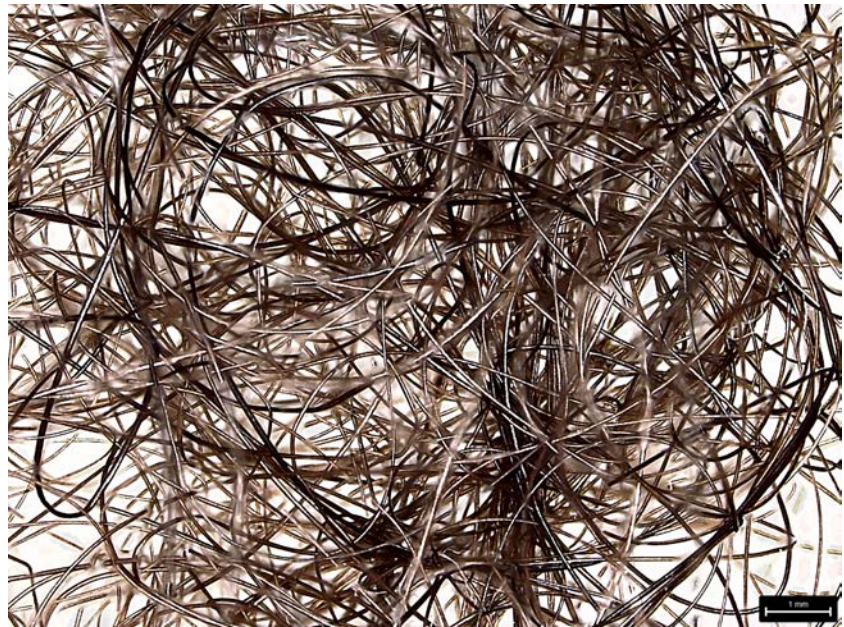
## Quinque Williams

### Introduction

Most people feel like success comes with ease. They believe that being this successful lawyer, doctor, or engineer is something given to you on a silver platter when in reality it's not. No one is perfect, so in order to reach your goals and aspirations in life you must go through a lot of trials and tribulations. This includes many failures, setbacks, and disappointments. But how would you know how to succeed if you've never failed? Our paths to success is far from a straight line, in facts it kind of looks like a ball of hair at high magnification.

### Miranda's Path

Miranda wants to be a dermatologist when she grows up. Her lifestyle as a college student is very difficult involving many late nights at MLC. She's had a little bump in the road with her chemistry class but after a while she overcame that class and is now living a very happy life. Miranda is Vietnamese and the texture of her hair is very silky and straight.



### Nina's Path

Nina either wants to be an engineer or a business woman. She has been raised in a family of engineers but doesn't seem to have the same drive as her family. Nina loves solving problems but her engineering class here at UGA was so difficult that she had to drop the class and change her major. Nina is now very happy and comfortable with the business major and loves her Friday's off with no classes. Nina is Bulgarian and has a soft curl type of texture with highlights of blonde and brown.

**Quinque' s Path (ME)**

Well I have a lot of goals and aspirations as you can see by the many tangles. I want to be a lawyer, business woman, cheer coach, etc. Growing up I had to work hard for everything I've ever earned and I still have to. Life here as a freshman was pretty rocky at first but as this semester wraps up I think I'm getting a little better. I still have a lot of learning and working to do but I'm ready for the journey. I am African American and I have very thick, curly, black textured hair.



### Valery Cepeda

Flowers grow and flourish among us in nature. While flowers are very pretty and used to display affection or appearance (like in gardens), flowers also serve as therapeutic purposes for restorative healing, and they can even be used to make certain teas. Many medical professionals have acknowledged that flowers offer natural medicinal properties without the side effects of modern-day pills and medications. I collected samples of three flowers from the Trial Gardens here at UGA and pictured them in this portfolio by using optical light microscopy. As a Pharmaceutical Sciences major, I decided to investigate the medicinal properties these flowers have to offer to showcase how beneficial flowers are.

#### Flower 1:

This flower is the *Coreopsis* 'Sizzle and Spice'. A medicinal use of *Coreopsis* includes infusing the flower without the root, which has been used by women desiring a female baby. The *Coreopsis* plant was also dried to make tea and was used as a coffee substitute.



#### Flower 2:

This flower, collected from the Trial Gardens, is the *Rosa Polyantha* 'Climbing Pinkie', and it is pictured here using optical light microscopy. The petals from roses are astringent. Astringent herbs are able to constrict body tissue and are effective in creating a barrier against infection such as wounds and burns. In this way, rose petals can be used as a skin wash to help bleeding from scrapes or cuts.



**Flower 3:**

This flower is the *Tibouchina urvilleana* 'Variegata' which is also known as the "Princess Flower". It is shown here using optical light microscopy. This flower is native to Brazil, and its infusion is used to treat stomach problems in Brazil.

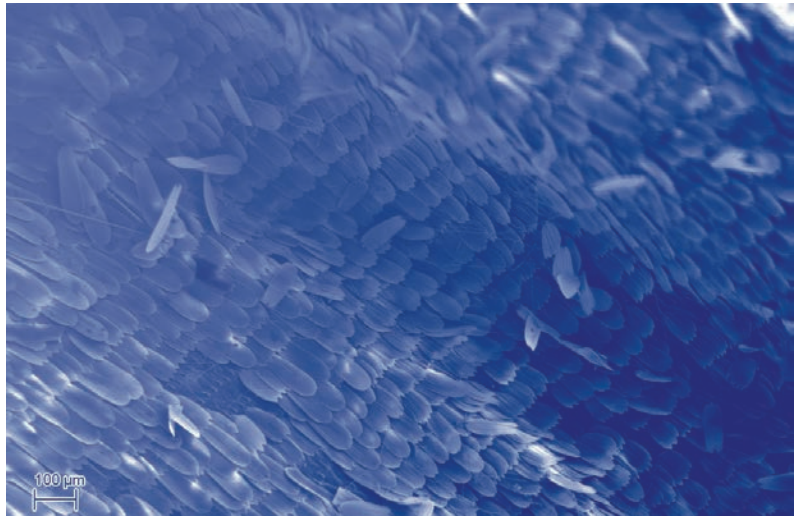


### Kobe Mumpower

**Intro** - My portfolio is comprised of four images taken all from a scanning electron microscope. These four images are of two separate types of insects, two of which are of a butterfly, leaving the other two to be of the most common type of insect, a beetle. My portfolio was made to take a much closer look at the defensive mechanisms that insects possess than the human eye can see. I chose this theme as I had always known that all different kinds of insects had their own form of mechanisms, as they'd need them to survive in this world. Yet, I had never truly known how these mechanisms worked, or even looked.

- a) In image a, we have an image taken from a scanning electron microscope where the scale is set to 100 micrometers ( $\mu\text{m}$ .) This image gives us a much closer look at the scales on a butterfly's wing than the human eye could see. While observing this picture, you can see that there are some scales that seem to be falling off, or misplaced.

This is because Butterflies possess the ability to easily shed their scales. This is to protect them from things such as spider webs, as if they get caught in one, they can easily shed their scales to get free.



- b) Image b is also an image taken from a scanning electron microscope, except this one is closer as

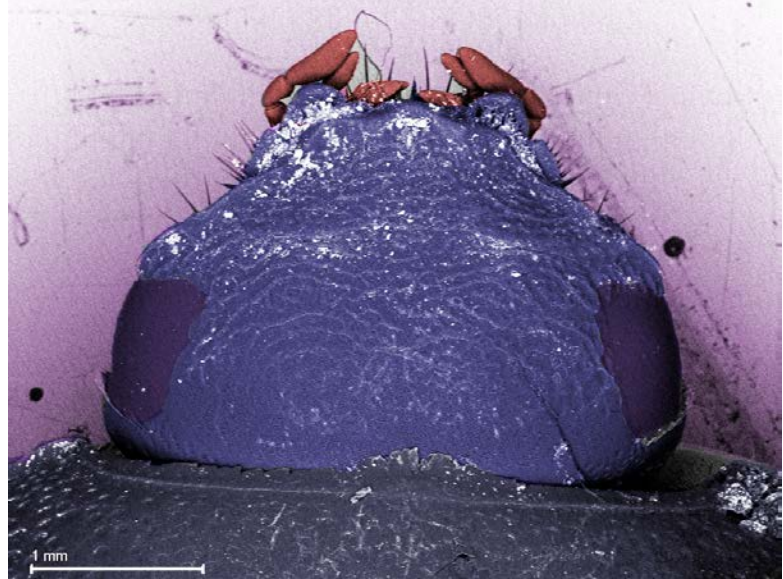
the scale is set to 10 micrometers ( $\mu\text{m}$ .) This image gives us a much closer look at the scales as it is roughly 10 times more magnified than image a. In this image, you can even see the individual



rough lines on the scales, which are much more difficult to see in image a. On the scales in this image, we see a stringy like substance, which could be small fibers holding the scales in place, or even a sort of dew.

- c) Image c is an image, also taken by a scanning electron microscope. This image has a much larger

scale than the previous images, as the subject being imaged is much larger, in that it is the head of a beetle. In this image, we can see the head, eyes, palp, and a bit of the pronotum. Although it seems as if the palp (colored red) may be the defensive mechanism here, it's actually the simplistic eyes, and the pronotum. The simplistic eyes are so that it can't be damaged much even if something were to happen to the eyes, and they even have small lash like structures to protect them. The pronotum is a shell like piece that is separate from the wings/abdomen.



- d) Image d is the same beetle, yet a different part of the beetle. This image was also taken with a scanning electron microscope. It shows us the shell that protects the wings being open, as well as

the wings that should be being protected. This is a major defensive attribute of beetles as the main source of transportation is being protected at all times that they are not being used. The white dots in this image are likely little gatherings of metal that the beetle has collected at some point on its journey. This image is not colorized as I did not hope to damage the visibility of these small individual dots.

