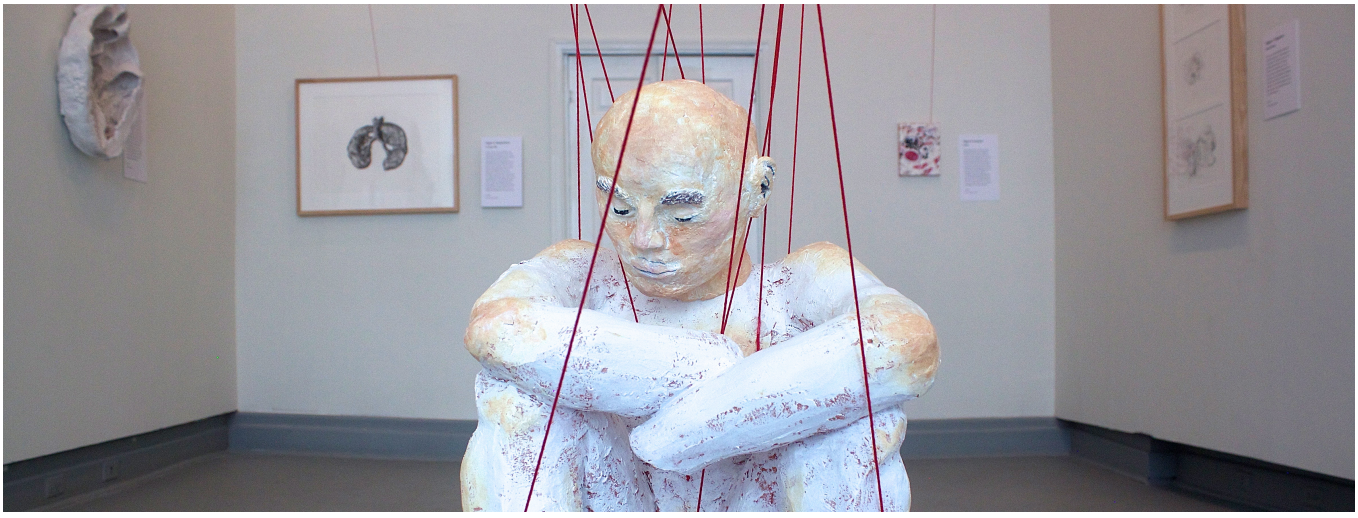


INSIDE EXPLORATION

REAGAN LONG

COLLEGE SCHOLARS THESIS

GALLERY 1010

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Proposal

Science and art have always been closely intertwined. Drawings and prints of biological specimens made it possible for medicine to advance. Drawn imagery is still crucial to learning as it offers the viewer another means of understanding. Too often, however, representations of images in science seem to have lost a lot of their artistic qualities. So many scientific textbooks, magazines, websites, and other publications have shifted to very impersonal, computerized renderings of representations of the most personal of subjects, the human body. I hope to use my art to move away from the depersonalization of the human body and back towards a more creative and intimate understanding.

The body is relatable to everyone in some form or another. I feel that every single solitary cell possesses astounding structure and function. Cells are all, also, uniquely beautiful. I want to celebrate even the smallest building blocks of the body in art, as well as dissect them in scientific studies. I do not want people to be intimidated by the limited extent of their scientific background when viewing a work of art. Art can be intimidating to try to comprehend, as well. I want viewers to find my artwork approachable despite their intellect in either field of study, science or art. They should be able to view and draw their own conclusions, regardless of prior knowledge.

For my College Scholars Thesis Project, I will present visual representations of the twelve different systems of the human body. My approach to this project is informed by my studies in biochemistry, anatomy, and microbiology. With each system there is a descriptive text panel that is either scientifically accurate or interpretive, depending on the exactness of the imagery. This method is meant to provide a commentary on the relationship between science and art, while also providing approaches that appeal to people of various backgrounds. If one approach is daunting, then, hopefully, the other is more relatable and thus allows for a possible connection to grow between the two. The works will be varied, encompassing drawing, painting, printmaking, and sculptural methods. I aim for the work to be inquisitive and informational. It is my hope that viewers will gain a deeper understanding of the relationship between art and science, while also learning more about their own bodily systems.

Exhibit



Figure 1: Nervous

Connected

The central nervous system consists of the brain and spinal cord while the peripheral nervous system is composed of the voluntary (somatic) and involuntary (autonomic) nervous systems. The brain receives, processes and stores impulses in its grey matter, and carries impulses throughout among neurons via what matter. The neuron is the basic unit of the nervous system. It is a conductor cell that receives and transmits electrochemical nerve impulses. These impulses may stay within the central nervous system, or convey information to and from the rest of the body via the peripheral nerves, which use a variety of types of neurons.

Figure 2: Lymphatic

Almost Floral

Whenever I see a flower growing in a crack in the sidewalk I cannot help but smile. It is such a delicate being in such a harsh environment. How did the seed get there? How has that tiny, perfect flower not been crushed yet? It is so hopeful and unknowing. It inspires me to look for flowers in unexpected places.



Figure 3: Endocrine

Fungiform

The endocrine system is a network of glands that control many body functions through the production and secretion of hormones. The system is critical to growth, metabolism, homeostasis, and cycles (such as sleep). A hallmark of endocrine glands is that each releases specific hormones directly into the bloodstream. Blood transports these hormones to reach other cells to help control and coordinate body processes.



Figure 4: Cardiovascular

Undisturbed

I have hiked Mt. LeConte more times than I can remember. I have only hiked it once in the snow. We went in February and at the trailhead it was chilly. About an hour in, however, the trail was completely frozen over and the mountain was covered in a blanket of white. The peak was unlike anything I have ever seen. The cold made the air crystal clear. The snow made the world look fresh and new. The wind was harsh and cruel. We could stand out from the cover of the trees for only a few brief moments before our sweat from the hike up began to freeze. Then we realized how quickly the sun would set and how long the hike down would be. After a brief state of panic, we started jogging back down the trail.

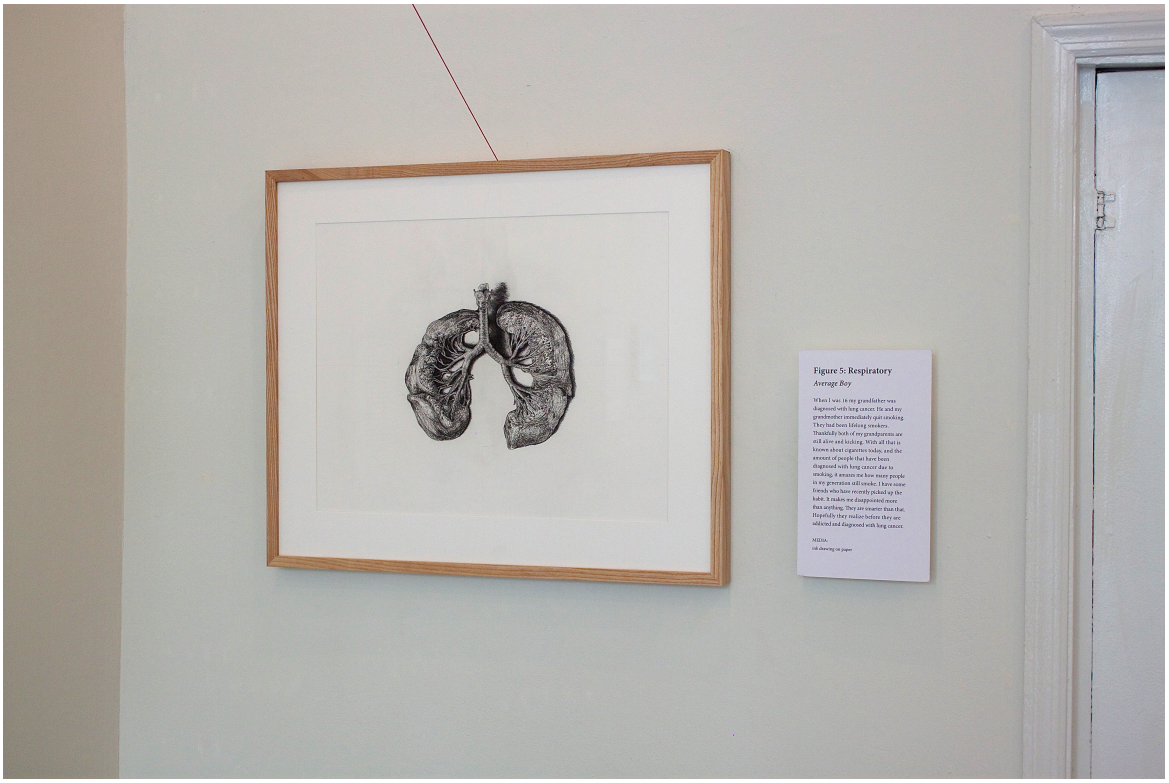


Figure 5: Respiratory

Average Boy

When I was 16 I found out my grandfather had lung cancer. He and my grandmother immediately quit smoking. They had been lifelong smokers. With all that is known about cigarettes today, and the amount of people that have been diagnosed with lung cancer from smoking, it amazes me how many people in my generation still smoke. I have some friends who have recently picked up the habit. It makes me disappointed more than anything. They are smarter than that. Hopefully they realize before they are addicted, well into their lives, and diagnosed with lung cancer.



Figure 6: Immune

Inked

White blood cells, or leukocytes, flow through the bloodstream to fight off viruses, bacteria, and other microbes considered to be foreign. When the body is in distress and a particular area has become infected, white blood cells rush to the area to attack the invader. White blood cells are produced in bone marrow and are stored in the bloodstream or in lymphatic tissue. Bone marrow is constantly producing white blood cells, and more will be produced to fight off infections. We can use white blood cell counts as a sign of infection, or a sign of an inability to overcome diseases.

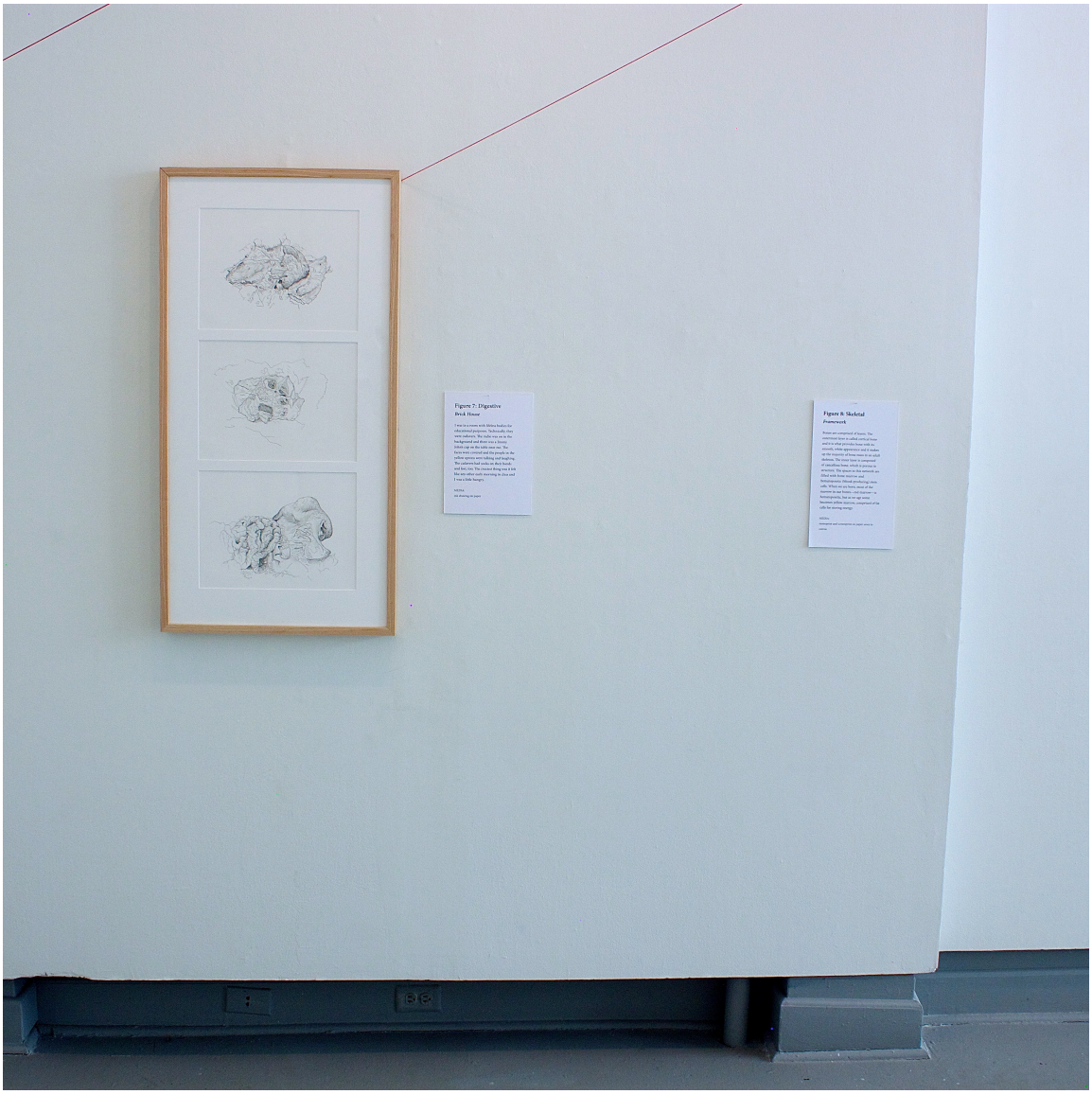


Figure 7: Digestive

Brick House

I was in a room with lifeless bodies for educational purposes. Technically, they were cadavers. The radio was on in the background and there was a Jimmy John's cup on the table near me. The faces were covered and the people in the yellow aprons were talking and laughing. The cadavers had socks on their hands and feet, too. The craziest thing was it felt like any other early morning and I was kind of hungry.



Figure 8: Skeletal

Framework

Bones are comprised of layers. The outermost layer is called cortical bone and it is what provides bone with its smooth, white appearance and it makes up the majority of bone mass in an adult skeleton. The inner layer is composed of cancellous bone, which is porous in structure. The spaces in this network are filled with bone marrow and hematopoietic (blood-producing) stem cells. When we are born, most of the marrow in our bones—red marrow—is hematopoietic, but as we age some becomes yellow marrow, comprised of fat cells for storing energy.

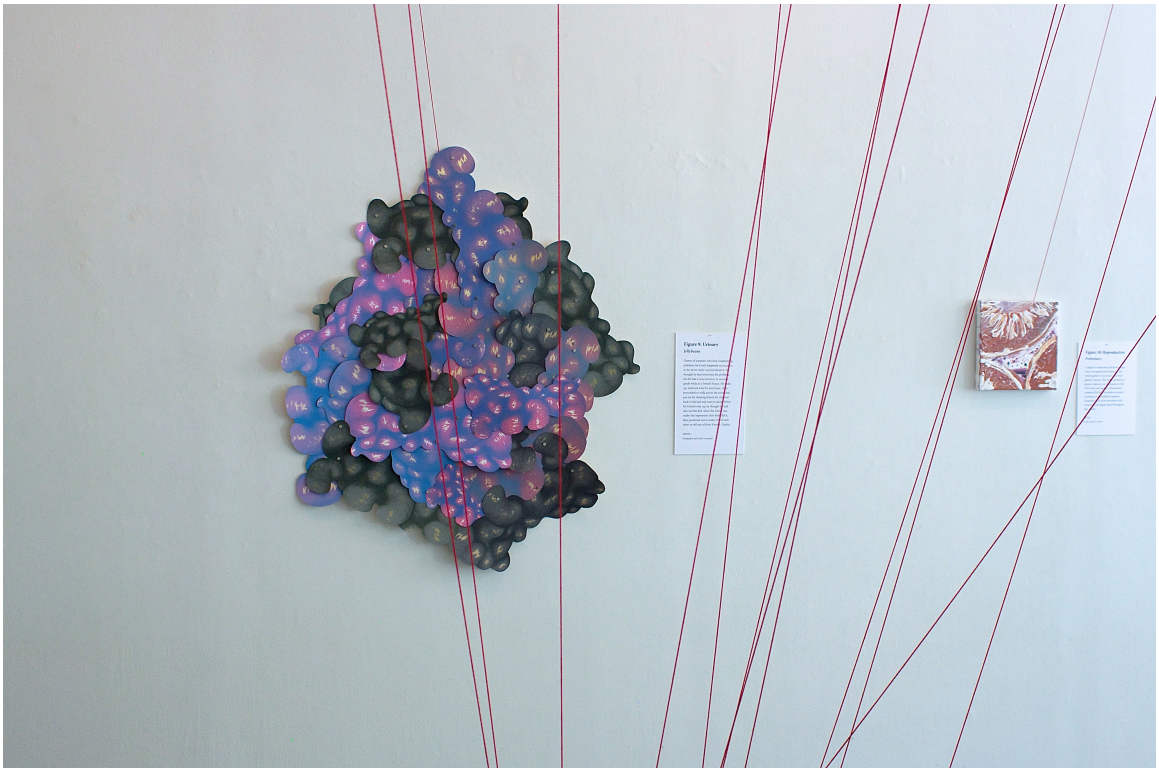


Figure 9: Urinary

Jellybeans

I know of someone who was a kid genius. He had a bedwetting problem, but it only happened on occasion so he never properly prepared for it. He thought he had overcome the problem, but he had a reoccurrence in seventh grade while at a friend's house. He woke up, realized what he had done, then proceeded to walk across the room and pee on his sleeping friend. He climbed in his bed and went back to sleep. When his friend woke up, he thought he had also wet the bed. Since they both did it, they promised not to make fun of each other or tell any of their friends. Genius.

Figure 10: Reproductive

Preliminary

A zygote is a eukaryotic cell that develops when two gametes are fertilized. The female gamete is an ovum. The male gamete is sperm. The zygote's genome, or genetic material, is a combination of the DNA from each gamete. This genome contains all of the information necessary to produce a multicellular organism, composed of all of the specialized cells, structures, and organs found throughout this exhibit.

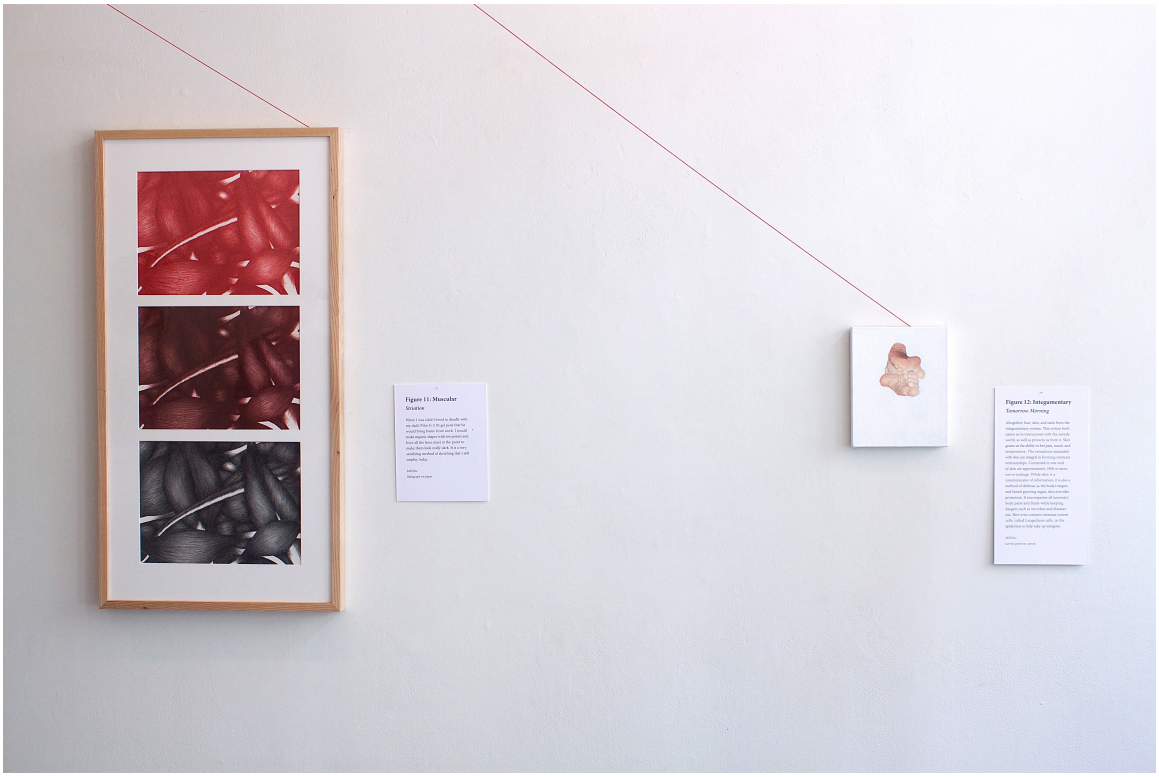


Figure 11: Muscular

Striation

When I was a kid I loved to doodle with my dad's Pilot G-2 05 gel pens that he would bring home from work. I would make organic shapes with two points and have all the lines meet at the point to make them look really dark. It is so satisfying.

Figure 12: Integumentary

Tomorrow Morning

Altogether, hair, skin, and nails form the integumentary system. This system both opens us to interactions with the outside world, as well as protects us from it. Skin grants us the ability to feel pain, touch, and temperature. The sensations associated with skin are integral in forming intimate relationships. Contained in one inch of skin are approximately 1000 or more nerve endings. While skin is a communicator of information, it is also a method of defense; as the body's largest and fastest growing organ, skin provides protection. It encompasses all necessary body parts and fluids while keeping dangers such as microbes and diseases out. Skin even contains immune system cells, called Langerhans cells, in the epidermis to help take up antigens.







Reflection

Half of the text panels in "Inside Exploration" are scientifically accurate pertaining to the body system represented. The other half of the text panels are more abstract in nature. They are mostly anecdotal reflections connected to the body system in a more personal way. The idea to write the text panels this way came from one of my critiques with my mentors, Professor Lyons and Dr. Auerbach. I was having trouble establishing juxtaposition between art and anatomy that was both interesting and informative. We were discussing various possibilities, but the size of Gallery 1010 was another important factor that limited the installation options and the number of pieces that could successfully fit in the show. The variation of text panels was the best fit because it would allow for a deeper understanding beyond the formal qualities of each artwork. A big struggle I had with the more literal anatomical representations was interest. I was worried that the straightforward nature of the imagery would fail in stimulating deeper conversation. When it came to the abstract imagery, I was further concerned that viewers would have difficulty connecting the art to the body system. The solution was to pair the more accurate imagery with an abstract description and the more abstract imagery with a more literal description. I am very satisfied with how the text panels were received in the exhibition. They gave the viewers the option to be as involved with the exhibit as they wanted. The text panels also provoked a large variation of conversations. I discussed lung cancer, the embroidery process, tattoos, and deficits in health care, among many other subjects.

I have always been in both science and art classes, so I am familiar with people who believe they are either left-brain or right-brain. In other words, they view biological sciences and studio art as two separate fields of study. I tend to view them as interrelated. I wanted the viewer to have the opportunity to also see that connection. If not, however, they could learn more about their body or learn about the studio process. I wanted scientists and artists alike to be able to come to the exhibition and discuss what they know about the artwork and text panels. "Inside Exploration" approached anatomy and medicine in ways outside of the artwork and text panels, as well. The exhibition was set up to allude to a textbook diagram. The string connected to each artwork was connected to the model "patient" in the middle. The location of the string indicated where each body system is in accordance with the human body. Each text panel was headed with "Figure" and the number. The numbers helped clarify the layout was in order from the head to the feet. In my mind, this was the orientation that represented a cadaver. The "Figure" was a reference to textbook figures and how they are often a zoomed in image of another picture or subject discussed in the text.

Resistance was a common theme throughout "Inside Exploration." I struggled with resistance because I was in a constant state of conflict with medicine and how I wanted to portray my concept. I was resisting straightforward imagery because I was constantly questioning what there was to gain from a realistic drawing, painting, or sculpture when there are surgical pictures. What was the benefit of drawing a body part that could just as easily be photographed and diagrammed? I believed that the intimate relationship provided through art was crucial to the process, but I worried whether or not that concept would show through the final piece. I also resisted clear-cut connections out of a desire to provoke thinking and conversation.

The presentation was another point of concern. I aimed to create a sense of sterilization and cleanliness, like a doctor's office or a procedure room. In an effort to encourage the viewers to relate to a patient in a doctor's office, the "patient" sculpture was set below eye-level and embodied emotions closest to despair and pain. The figure was also naked, both as a testament to anatomy and to the exposed nature of being truthful with a doctor. The goal of this set up was to encourage people to discuss health care and the relationship between doctors and their patients. Furthermore, some of the artwork addressed disconnect between medical professionals and patients. The digestive drawings were completed in the gross anatomy lab while graduate students were dissecting cadavers. They were talking about dates and restaurants while human bodies were open and vulnerable on metal tables. It was a very surreal experience. It helped me better grasp the professional separation that must be made, while also demonstrating the humanity of the individual observed.

Some of the artwork was personal in a way that was not necessarily obtainable from simple observation of the piece or text. For example, the heart sculpture for the cardiovascular system had subtle deformities representative of left ventricular non-compacted cardiomyopathy. It is a genetic disease suffered by my uncle and his three kids. It affects their everyday life and is a huge factor in my desire to attend medical school and become a pediatric cardiothoracic surgeon. The socks present on the figure in the middle of the gallery floor were also a very important aspect without explicit justification. One of the first details that caught my eye in the gross anatomy lab was the socks on the hands and feet of the cadaver. At first I thought they were a strange joke. It was not until I asked the professor that I learned that their purpose was to prevent the hands and feet from drying out. It provided an interesting contrast to the exposure of the naked bodies. Their feet were covered but the genitals were exposed. I knew it served a logical purpose, but something about their presence seemed to make the cadavers more human.

Overall, I am very pleased with "Inside Exploration." I had wonderful conversations and overheard many other stimulating discussions over the three-day

course of the exhibit. It was an incredible learning experience that taught me a lot about studio practices, medical processes, and communication with individuals from all walks of life. It was incredible to see my work influence others, as well. One of the most memorable experiences occurred on the last day around 2 pm. A 67 year-old man was walking through the gallery and was talking to me about the techniques and line quality before we delved into the state of his lungs and liver. Then he expressed his opinions to me about health care and people who approach it from a unique perspective. Before he left, he told me he was so moved that wanted to play me a song on his guitar. He proceeded to sit on the stool and sing me two beautiful songs. It was only the two of us in the studio. Afterwards, he told me about his gallery across the street and his past musical conquests. He encouraged me to come to his gallery and view his work. It was truly unforgettable.

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