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I'm Going Cycle Every Day

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I’M GOING CYCLE EVERY DAY

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Master of Fine Arts

in

The School of Art

by

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ABSTRACT

Many designers and scientists have been able to integrate design and science in their respective fields to create works that effectively inform their audiences of complicated subjects. Each of these individuals can express their creativity and viewpoint of the subject matter in a way that is interesting, visually appealing, and informative. Using the medium of graphic design, I created printed posters that represent the way I view the processes of the human body that are technical, yet also visually appealing.

My thesis exhibition walks my audience through the biological cycles that maintain the human body on an everyday basis from head to toe. This is achieved through the interpretation and visualization of biological data. The goal of these works is to inform the audience of the nuances of changes that occur in the body that can cause physical and emotional changes. In addition, while the audience is looking at the work, they should ponder about what is occurring in their own bodies and what they are personally doing to affect their health.

This exploration of merging design and science helped me represent science and see science in a non-textbook/non-conventional way. Scientific concepts do not always have to be in the form of overly technical diagrams to be able to inform the audience.
INTRODUCTION

Our biological systems are tightly regulated to keep our bodies in homeostasis every day. One wrong move and dysfunction is bound to happen. As all of us go through our daily routines, the thought of how a specific cycle works to keep our bodies in check rarely crosses anyone’s mind. However, if we understood the timing and changes that occur in the body, we can better understand the effects that our lifestyle choices have on our systems.

The integration of design and science has been a great interest of mine since I became a designer while pursuing my degree in biology. To understand the material for exams, I visualized the processes by doodling in my notebook next to my written notes and used visual cues to memorize them. When I began my journey in design, I struggled to create compelling yet informative works that were uniquely me. However, as I began to work with raw data and learned about the principles of data visualization, my creative vision for my work began to manifest in the designs I created.

*I’m Going Cycle Every Day* was born from the idea that cycles are constantly running in our bodies every day. The title also has a dual meaning; the second meaning is an homage to the stress and exhaustion that it took to learn this material as a science major. The word “cycle” is very similar to the word “psycho,” allowing the title of the work to represent the cycles going on in the human body and my personal feelings.
THE PRECURSOR

In the real world, the job of a graphic designer is to create work based on the clients’ wants, needs, and vision. Although a designer can apply their own style and touch to a commission, the designer works based on the client’s guidelines. Clients can restrict the client to specific colors, compositions, fonts, and ideas, which the designer must adhere to. This also holds true for class assignments. Students receive guidelines on how to develop their projects to meet the course learning objectives. Thus, when moving from a corporate job or classroom environment to an environment where the students’ work is based on the students’ own freedom to choose their topic or their own vision, it can be overwhelming. This is the experience of many incoming graduates, especially me.

The freedom to choose and work independently sounds like a designer’s dream. It is a dream to be able to exhibit work that is free from the grasps of a client, but that can come with a lot of doubt and confusion as to which problem to tackle with design. The work created for *I’m Going Cycle Every Day* is the result of many experimental projects created during my time studying for the Master of Fine Arts program at Louisiana State University in Baton Rouge. During this time, there was a recommendation to focus on experimentation, so I experimented with different design formats and experimented with different topics to search for the specific topic that I was passionate enough about to create a body of work for.

The first project was a campaign for the support of vaccination. Fresh from undergraduate school and the environment of biological sciences, vaccination was a topic that was still on my mind from my studies and relevant to real life. The result was a poster series that focused on the stories of families that lost their loved ones due to their anti-vaccination beliefs. I experimented with photography and typography. Taking my own photos and editing them helped
me learn about composition and coloring. Learning about composition helped me understand how to put together design elements to create pieces that were visually balanced, while learning about color helped me better choose colors that enhance the story of my work.

During my third semester, I focused on genetically modified organisms that I learned about during my Ethics of Genetic Engineering class at Xavier University of Louisiana. My professor during the time once mentioned that most foods we eat were GMOs due to the selective breeding practiced by humans. The focus of this project was to destigmatize GMOs and point out the way companies take advantage of phrases such as organic and genetically modified organisms to sell their product. I experimented with designing packaging that was modern and different from what one would see in the grocery store. These packages also included information about the product and how the product came to be from selective breeding. As a result, I was able to better understand placement of typography, selecting typefaces that complement each other, and the personality of different typefaces.

Following this line of research, an illustrated poster series for the anatomy of the human body systems was created where I focused on the composition, color, and typography. I illustrated the body systems and used typography to label the parts. The poster series was a display of my ability to create posters that were more colorful, engaging, and approachable for the college student. Although the illustrations were different from the traditional medical illustrations, the work lacked personality and had no indication of who I was as a designer. There was no story. However, favorite subject was always Anatomy and Physiology for I was fascinated with how processes worked in the body and wanted to educate my audience about their own bodies while representing my own creative vision. I began to dive into creating designs about the human body.
THE CATALYST

How does a designer express the information of a complicated subject while keeping expressing their own creativity in the work? I can create beautiful posters, but how can I create work to show who I am as a designer? This was the biggest challenge to solve.

The design course, Designing with Data was my catalyst for creating *I’m Going Cycle Every Day*. Courtney Barr, Associate Professor of Graphic Design at LSU who developed the Designing with Data course, inspired my research into information graphics. During this time, I created a poster that told the story of how the hormones during a woman’s menstrual cycle changed throughout the month and a poster of how lighting conditions affected the production of melatonin.

I began to understand more clearly how effectively I could communicate scientific information while expressing my point of view and creativity with the process of analyzing raw data and using principles of methods of displaying data. Data visualization is the visual representation of data and information. However, it is not just bar graphs, line graphs, and pie charts. “What if emotion and curiosity are the goals? Visualization is a way to represent data, an abstraction of the real world, in the same way that the written word can be used to tell different kinds of stories.”¹ With data visualization, the goal is to evoke a story for the viewer, instead of displaying just the facts.

Due to the nature of biology being a timed process, common ways to represent biological data include line charts, bar graphs, and dot-bar graphs since these methods display data over time. Line charts display data using a continuous, straight line, making it an appropriate method for seeing trends. Bar graphs represent data with rectangles. Dot-bar graphs emphasize the

specific data points over time and sometimes are connected by lines to show the trend.\textsuperscript{2} Being so used to these methods from seeing them in textbooks and research papers, the challenge was to represent the data to create emotion and a story for the viewer. Ultimately, data visualization became the best way to communicate the complexities of the processes in the human body.

\footnotesize{\textsuperscript{2} Nathan Yau, \textit{Data Points: Visualization That Means Something} (Indianapolis: Wiley, 2013), 155.}
RESEARCH AND INFLUENCES

Data visualization and biology go hand in hand with each other. Between reading a book of text and seeing a visualization of the information, the visual is more effective way of communication. “All primates, including humans, are highly visual creatures. We rely heavily on visual cues for basic adaptive behaviors such as finding food, mates, and shelter; as well as more complex behaviors…”3 By turning biological information and data into a visual learning experience, it is easier to educate and communicate with the audience. In addition, the audience can find the information more approachable and interesting.

Visual cues are important in visualizing data. Position, length, angle, color saturation, color hues, etc.4 can make data look and feel more interesting. Depending on what kind of data is being analyzed, a specific visual cue can be used. The designer’s use and stylization of these cues build up to their own signature style.

As research began into the history of merging of biology and design, Will Burtin’s work became a strong influence. His work consisted of graphic design and sculptural pieces. A key component in his graphic design work was the ability to interpret information and convey information in a way that was easy to understand for the public. He had the ability to show biological content abstractly so that his audience could feel and understand the biological aspects of his work. His sculptural works for The Upjohn Company consisted of exhibitions of body parts such as the brain, the cell, the sound waves, etc. He did not make his pieces look like the literal body parts but used materials, lights, color, and sound to show his own interpretation of the body.

Data designer Nadieh Bremer of Visual Cinnamon, “…focuses on uniquely crafted (interactive) data visualizations that both engage and enlighten its audience.”  

Bremer’s clients include Science News, Sony Music, Physics Today, and Scientific America. In her work, she strays away from conventional graphs and charts. She uses shapes, colors, and illustrations to create data visualizations that are abstract, but also informational.

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CHOOSING THE CYCLES

The process began with choosing which cycles to represent in the human body. The biological processes were chosen based on a human’s circadian rhythm and activities that are essential for us to perform every day. Furthermore, some of the processes relate to my own personal experiences.

Body temperature and melatonin production was featured from the head. Body temperature is an important example of homeostasis, “the relatively stable conditions inside the body needed for survival.” There are many examples of homeostasis in the body, but body temperature was selected because I personally experienced temperature changes throughout the month and have wondered why it occurs. Melatonin production is related to sleep—something that many college students do not get enough of due to school, use of electronics at night, or social obligations. I experienced issues with sleep due to these reasons, therefore I investigated the data for melatonin production.

In the neck area, the thyroid regulates the metabolism, which “refers to all the chemical reactions that occur within body cells.” Most importantly, the thyroid regulates how well humans turn food into energy. This process can affect a person’s daily mood and weight management. As a person that struggles with both and has a family history of thyroid cancer, the interest in thyroid hormone production comes from these personal experiences.

The heart, located in the chest, continuously pumps blood throughout the body during the day. The blood transfers essential nutrients to the organs to maintain the organs’ functions. When the heart does not deliver blood properly, organ death can occur. The lungs, also located in the

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8 Ibid, 685.
chest, constantly brings oxygen into the body and carbon dioxide out of the body. Like the heart, the lungs play a role in delivering oxygen to the organs of the body. The challenge in representing these systems was that the information to be visualized was not quantified, as they do not produce hormones like the other systems. For the heart, electrocardiogram readings provided an excellent image of patterns, which when visualized, provided a compare and contrast of the different heart conditions. The challenge with the lungs was the representation of the movement of gasses within the body while maintaining the abstraction of the work.

Eating is an activity essential for providing fuel for the body. However, many people who have busy schedules can miss a meal, causing disruption in the system. The fluctuations of insulin and glucose was of interest because of the physical effects they cause to the body, which many can relate to. The opportunity to visualize the levels of hormones produced at every hour to see the tapering and spiking of hormones was a challenge as the data was time-specific and the work needed to show the relationship between the two hormones.

The female and male reproductive systems are the only systems that are sex-dependent. Displaying data for the major hormones for both was an opportunity to appeal to females and males respectively. The extensive data for the hormone levels allowed for the challenge of being able to fit all the information into one space in a balanced way. In the same region, the urinary system is relatable in terms of the constant elimination of waste. The interest was in the function of the nephrons and how they work to produce urine.
FINAL EXHIBITION IMAGERY

I’m Going Cycle Every Day Logo

*I’m Going Cycle Every Day* was so titled because of its relevance to the body of work’s display of cycles occurring in the body every day. However, the phrase also has a double meaning of “I’m going psycho every day” as the words “cycle” and “psycho” sound very similar. This was to reference the feeling I had when I was a biology major learning the material for exams. The constant influx of information from professors, studying hundreds of textbook pages for a 20-question exam, and getting only 4-6 hours of sleep every night can make anyone go psycho.

The word “cycle” refers to the cycles in the human body. The body processes constantly run on cycles to maintain the functions keep the body alive. It is also in relation to how humans live their lives. Every day, a person maintains a routine or a cycle of activities to live their life. As a result, it becomes the main feature for the logo as well as the theme of the collection.

The visualization of the logo reflected the components within the body of work. The word, “cycle” is constructed with circles of many sizes, indicating that the body of work follows this motif. The gradient represents the colors that can be found in the human body. Pinks, blues, purples, and reds are indication of the blood vessels, muscles, and organs of the human body.
The typeface, Hamish, provides a casual and playful feeling as it is a script typeface. Science is oftentimes seen as a rigid, hard subject, so the choice to use a softer, flowing typeface appeals to those who find the subject unapproachable.

For the whole body of work, the layout and appearance of the elements are kept consistent to keep the posters consistent with each other. The typeface, Hamish, is used throughout the body of work to highlight the title of each poster. The sans serif in the logo, Arboria is used as the body text for the posters and acts a balance for the thick display font. The data is presented on a rich black background to allow for the vibrant colors to stand out. The bottom right corner contains a graphic of the human body that marks the location of where the processes are happening to ground the audience of where specific processes are.

Keeping this work in a poster format ensures that the audience can look at all the information at their own pace. As these works were in development, the aggregation of data allowed itself to take the form of a poster since the work takes up a lot of physical space. Thus, formats such as video may distract the viewer from understanding what is being presented. A person with no interest in science also may not want to sit for a video, but can see the impact of the poster and stop to examine it. The posters’ extensive information can be harder to read on smaller formats such as books and websites.
Figure 2. Body Temperature Changes Poster

The goal of the Body Temperature Changes poster is for the audience to be able to distinguish the body temperature changes and relate it to their own bodies. A viewer may find that because the body temperature naturally drops during the night that perhaps it would be better to sleep in a cooler environment to help with sleep. A woman can understand that throughout
different periods of the month, she may feel warmer or cooler based on the timing of her menstrual cycle.

The information shows the change in body temperature throughout a 24 hour cycle for women in the follicular phase of their menstrual cycle, men, women in the luteal phase of their menstrual cycle, and women on contraceptives taken from the rectum. The data for this poster is from the research article, “Sleep and 24 Hour Body Temperatures: A Comparison in Young Men, Naturally Cycling Women and Women Taking Hormonal Contraceptives” published in *The Journal of Physiology*.

The researchers presented their results using a line graph and it was analyzed to obtain the raw numbers for the data poster. A grid was placed on the line graph to obtain the temperature at each hour. The temperature at each hour was recorded for every parameter.

The 24-hour cycle is placed circularly to imitate a clock. The circular shape of this data visualization allows for an undisrupted cycle of change and indicates that this change happens continuously in the body every day. Each hour is represented in military time. Each data circle’s size is based on its temperature—a lower temperature is represented by a smaller circle and a higher temperature is represented by a larger circle. Also, the further away the circle is from its corresponding hour, the higher the temperature and vice versa. This way, the audience can see the trend of change temperature within the body amongst the different parameters. The colors of the work is based on the colors of what hot and cold connote. Hot colors connote warmer colors such as red and orange and cold colors connote cool colors such as blue and white.
The goal of Melatonin Production and Light poster is to inform the audience of how light can affect the quality of sleep. With many of us using our phones and laptops long into the night, the light emitted can affect our quality of sleep. The information on this poster can help communicate the importance of the sleeping habits of the viewer to help them recognize the choices they make before bedtime.
The information shows the effects of lighting conditions on the production of the hormone that induces sleep, melatonin. The data is from the research article, “Exposure to Room Light before Bedtime Suppresses Melatonin Onset and Shortens Melatonin Duration in Humans” from *The Journal of Clinical Endocrinology & Metabolism*. This poster represents data that researchers obtained over the course of three days. The researchers set up a room with bright or dim lighting to measure the amount of melatonin produced by the participants. The raw data was pulled from the graphs that the researchers provided as their results.

The data is presented as a timeline with the day 1, day 2, and day 3 placed side by side to provide comparison of the amount of melatonin produced during each hour. This way, the audience can easily see how the different lighting conditions affect the production. Again, because of the motif of the work being circles, the data points were represented by the yellow circles. The bigger the circle, the more melatonin produced. The smaller the circle, the less melatonin produced. They are also all proportionate to their data points. The colors emulate a night sky with stars, moons, and clouds to reference sleep.
The goal of the Thyroid Hormone Production poster is to show how the production of thyroid stimulating hormone (TSH) differed from night to day. One of the main purposes of the thyroid is to maintain the human metabolism, which relates to how calories are burned. The viewer can learn that because the production of TSH increases during the night, having adequate sleep is vital to weight loss goals and feeling energized.

Figure 4. Thyroid Hormone Production Poster
The poster shows the amount of TSH produced during a 24 hour cycle. The data is from the research article, “Circadian and 30 Minutes Variations in Serum Tsh and Thyroid Hormones in Normal Subjects” from the journal *Acta Endocrinologica*. The researchers provided a line graph plotting the TSH production at every half hour. The raw data was pulled from this graph by applying a grid to the graph and mapping the TSH level at every half hour.

The data is represented in two rows at 12 hour intervals where the inner row represents the amount of TSH produced during the day while the outer row represents the amount of TSH produced during night. Having the data separated into two rows allows the viewer to better distinguish the production difference between day and night. The data is also colored from a light tan color to a darker tan color to represent the time difference, with the tan color selected to indicate the color of the thyroid organ. Since nighttime connotes darker colors, the shift in gradient from represents day to night going from light to dark. Each circle is sized based on the amount of hormone produced and labeled “am” or “pm” to distinguish whether it is morning or night to further enhance the viewer’s understanding of which data points are for day or night.
The goal of the Gas Exchange poster is to educate the viewer of the process of what gas exchange is and how the gasses move within the body. All humans breathe air, but we rarely think about why it is an important aspect of living (to bring oxygen to the tissues).

This piece shows the movement of gases in the body rather than using raw data to educate the viewer. This piece is more abstract design than the others as the work refers to some
of the parts of the body, but does not directly illustrate the actual body parts. The information is from the 9th edition of the textbook, “Human Physiology: From Cells to Systems” by Lauralee Sherwood. The textbook illustrates how oxygen and carbon dioxide moves from the pulmonary system to the tissues based on the pressures in mm Hg. The illustration shows the lungs, the veins, the arteries, and capillaries.

For my interpretation of this process, I simplify the composition by keeping with the circular motif and using that shape to represent the body parts of the process. The tiny dots represent the gas particles moving from one part of the body to the next. The movement is show by clustering the dots where the gas is more concentrated and moves towards the next phase, while the dots that are spread out are the “tail” of the gas. The circular rings represent the pressure of gas in the lungs and are sized proportionally to the amount of pressure of each gas. This piece is a more abstract representation of the body, which is one of the elements I wanted to incorporate into my work.
Figure 6. Types of Heart Beats Poster

The goal of the Types of Heart Beats poster is to inform the viewer of what each type of heart rhythm looks like based on my idea of them. Today, many of us have smartwatches that have built-in EKG reader, which is useful in detecting abnormal heart rhythms. Knowing what those rhythms look like can help identify if the viewer has something to worry about.
The Types of Heart Beats poster is my interpretation of the different types of heart beats that can occur in the human body using electrocardiograms (ECG or EKG). The electrocardiogram readings used to create this work were from the 9th edition of the textbook, “Human Physiology: From Cells to Systems” by Lauralee Sherwood. I analyzed the waves of the EKGs for each type of rhythm and created my own system of rhythm using circles.

The circles represent the height of the waves as well as the regularity or irregularity of the EKG waves. Each type of heart rhythm is placed around the title like a music record. This way, the viewer can compare and contrast the different rhythms in its size, and frequency. As the viewer looks at the information from the outside in, they can see that from a normal rhythm to the most dangerous rhythm, the circles begin to become more irregular. The colors relate to blood, blood vessels, and parts of the cardiovascular system. I created a work that moves away from the standard look of EKG waves.
Figure 7. Insulin and Glucose Poster

The goal of Insulin and Glucose is to educate the viewer of how fast glucose can be stored into the liver by insulin. According to the data, it only takes a couple of hours for glucose in the system to decrease to a low number. This affects how someone can feel on an empty stomach if they have not eaten for hours and this poster encourages the audience to eat every
couple of hours or have a consistent eating schedule to avoid the fatigue and/or shakiness we feel when we skip a meal.

The data shows the amount of insulin and glucose produced at every half hour. The data is from the research article, “Pancreas Islets in Metabolic Signaling - Focus on the Beta-Cell” published in the journal, Frontiers in Bioscience. The researchers included a line graph in their article that shows the production of insulin and glucose over a 24 hour period. They also indicate when breakfast, lunch, and dinner is served.

For this piece, I continued the motif of circularity, but represent the individual data as one dot per unit of hormone. The data for insulin and glucose is side-by-side giving the audience an understanding that if the amount of glucose increases, insulin increases. The data is separated into two rings to allow for space within the canvas and distinguish the data between day and night. All the data points are individually labeled with the time so that the viewer can easily identify when the changes occur.

The colors were inspired by the colors of the components of the digestive system. When thinking of bile, stomach acid, and the juices in the system, the association is towards yellow and orange colors. The coloring of the data is important because the gradient distinguishes where the hormones spike. The darker the color, the more hormone produced.
The purpose of The Menstrual Cycle poster is to inform women of the different levels of hormones produced throughout the month. Many women experience symptoms such as mood swings, hot flashes, cramps, and headaches which are caused by the changing levels of hormones. Knowing when and which hormones fluctuate can help manage the symptoms and
help women understand when to expect these symptoms. Also, learning about the fluctuating hormones can also help with planning pregnancies.

The data shows the levels of hormones produced during a 28 day cycle. The data is from a graph by Straight Healthcare and cross-checked with the book by Sherwood. The raw data is from the graph by applying a grid to the graph and plotting the levels of hormones at every day.

The data is represented by dots in a circular format. Each dot represents one unit of hormone. The aggregation of all the dots created large, organic shape that was interesting and became the focal point of the whole poster. Although all the hormones are represented on one canvas, the colors distinguish them from each other. The colors are associated with the blood during a menstrual cycle and the femininity of a menstrual cycle. This work set the foundation for the whole body of work in terms of the size of the canvas, color of the background, and format. The colors lay vibrantly on the rich black and created an elegant look. The size of the work, 30 inches by 30 inches, allows the aggregated data points to be large enough to make an impact on the viewer.
Figure 9. Testosterone Production Poster

The goal of Testosterone Production poster is to inform men of how testosterone is produced from day to night and from a young age to an older age. Hormone production is very much based on the circadian cycle that we function on, so because testosterone levels are higher
at night, adequate sleep is required to maintain those levels. Otherwise, low testosterone levels can cause fatigue, reduce lean muscle, erectile dysfunction, and depression.\textsuperscript{9}

This poster displays the data for testosterone production in younger and older males. The data comes from a graph created by the authors in the research article, “Loss of Circadian Rhythmicity in Blood Testosterone Levels with Aging in Normal Men*” published in the \textit{The Journal of Clinical Endocrinology & Metabolism}. Since the female reproductive system was represented, I also wanted to represent the male reproductive system for men to be able to relate to the work.

The raw data for the levels of testosterone comes from the researchers’ graph. After obtaining the data, I began to experiment with different shapes of how I wanted the timeline to look. Using the chemical structure of testosterone, I outlined the structure and rounded out the hexagonal rings, creating this winding shape. One side of the production of testosterone for young men (mean age 25.2 years) and the other side has the production of testosterone for older men (mean age 71 years). In between the data points are the times in intervals of 30 minutes to indicate the hour that the specific hormone level is produced.

One unit of testosterone is represented by one dot. A cluster is then formed and the size of the cluster is adjusted to the amount of hormone. In addition, a gradient is applied to the clusters to easily distinguish at what times testosterone is at its highest and lowest. These elements allow the viewer to easily compare and contrast the testosterone production based on different parameters.

\textsuperscript{9} \textit{...“Low Testosterone,” Low Testosterone: Symptoms, Diagnosis &amp; Treatment - Urology Care Foundation, accessed May 11, 2022, https://www.urologyhealth.org/urology-a-z/l/low-testosterone.}
Figure 10. Urine Production Poster

The Urine Production poster is to show the audience a map of where and how waste is filtered out of our body. Understanding how waste is filtered and what the purpose of each part of the nephron does can help the viewer keep in mind how dehydration occurs when consuming certain beverages like alcohol. In addition, this piece was meant to be a more casual piece
focusing more on the shape and composition of the work, rather than the numbers and information.

This poster shows the movement how ingested liquids are filtered. This work is illustrative, rather than a display of raw data. The information used to create this work was from the 9th edition of the textbook, “Human Physiology: From Cells to Systems” by Lauralee Sherwood. The illustration in the book shows that liquids are filtered from the glomerulus to the distal tubule, so the movement of filtration through the different parts of the nephron was illustrated.

The transparent shapes represent the renal medulla, where the nephrons do their jobs. All these shapes together create the silhouette of a kidney without directly illustrating a kidney. Each “renal medulla” has two different types of nephrons (real kidneys have millions of nephrons per renal medulla) to highlight the two types available in the body as well as for the audience to be able to distinguish each nephron. Each part of the nephron is color coded colorfully to indicate that there are different types of wastes being filtered out of the body. The red tubule that brings the waste to the bladder creates this floral-like stem and makes the overall composition of the kidney look like a flower. This supports the organic, biological themes in my body of work.
CONCLUSIONS AND PROSPECTS

The goal of my work was to show that biology and creativity can live in the same space and that they are not mutually exclusive. In addition, I wanted to express my design skills and vision with a topic that I truly enjoy learning about. These posters allowed me to be able to have more creative freedom with the information I have learned instead of being technically correct by displaying all the information that can possibly fit onto one canvas. I was able to select and edit the information I wanted to keep while removing the information that wasn’t as useful to the point of everyday cycles that I was making. Each poster was able to display information about an everyday process in the body using interesting compositions, shapes, and color, away from the common ways biological data is represented. I challenged myself to make each poster unique by keeping the way of displaying the data different for each.

A major component that was missing from each of the posters was how to read the information. Each cycle was represented in days or hours, which was not specified in some of the work. These issues can be resolved by labeling what the numbers are used for to help better understand the context of the work. Another solution is adding textual information as to what the data is trying to tell the audience. In addition, there was an issue with contrast. The audience had a hard time reading some of the information. The choice of a darker background resulted in some of the colors of the elements to become lost. Based on the specific poster, the colors can be changed to brighter colors or a thicker outline can be added to shapes with the difficult to read colors.

The development of this work has furthered my experience and understanding of graphic design even more. Coming from a non-graphic design background, the experience has helped me
think critically about my design choices. I am not only making just pretty designs anymore, but designs that have thought and theory.

When this body of work was in creation, consideration of how it would reach an audience was necessary. Where would my audience see this work? How else can I display this work that can reach even more people? The initial thought was to display these as posters in a classroom, as my experience was that science classrooms were bare and created an uninspiring learning environment. Although the work will be displayed at Xavier University of Louisiana, the future of this body of work can branch off into the digital world, creating interactive displays instead of static posters.

The work can be displayed in doctor’s office, hospitals, or medical companies. These institutions can use the works as informational posters in a waiting room and informational tools for selling medical equipment. In the future, I imagine these posters to be integrated as learning tools for students in the form of a website, motion graphic, or both. Done thoughtfully, motion and interactivity can better elevate the static form of the posters to better understand the material and allow me to continue my investigation in displaying biological data.
Figure 11. Exhibition Space at the Clark and Laura Boyce Gallery
BIBLIOGRAPHY


VITA

Lauren Yen Nguyen is a Vietnamese American graphic designer who earned her degree in Bachelor of Arts in Biology at Xavier University of Louisiana in New Orleans (XULA). During her time at XULA, she volunteered as a designer for Xavier University of Louisiana Vietnamese Association (XULAVA), which kindled her to pursue a career in design. After graduation, she entered the Master of Fine Arts program in the College of Art and Design at Louisiana State University (LSU). At LSU, she worked as a designer for the Office of Research and Economic Development. She currently works as a freelance designer at Lauren Nguyen Design and as a photographer and videographer at Dat Le Studios. She will receive her Master of Fine Arts degree from LSU in August of 2022.