SOFIA MONACO PORTFOLIO

Sofia Monaco, BFA

Biomedical & Scientific Visual Designer | Illustrator Graphic Designer | 2D & 3D Animator | Character Designer

WORK EXPERIENCE

Graphic Visual Designer Specialist

Henry J. Austin Health Center - Trenton, New Jersey August 2023 to Present

Developing diverse materials in both English and Spanish to serve the population of Trenton

Designing engaging visuals for marketing campaigns through daily social media posts, print materials such as flyers, and short or long form promotional videos, currently reaching >2000 views

Adapting, innovating, and building on existing brand styling guidelines to create compelling stories

Maintaining and managing the Health Center's WordPress website analytical insights as well as site health; done effectively in conjunction with creating and invigorating existing web design

Enhancing patient experience through creating an interactive and accessible handbook with over 500 unique interactions

Medical Illustrator

Atlas InMedia - Remote Contract July 2022 to December 2022

Created over 50 different, simple, comprehensible line illustrations depicting various physical therapy exercises for adolescents to follow

Produced illustrations focusing on introducing diversity for the anticipated audience at the Children's Hospital of Philadelphia

VR 3D Modeler and Texture Painter Lead

Rowan University VR THA Project - Glassboro, NJ June 2021 to May 2022

Created over 20 new dense assets, as well as retopologized old models for a Total Hip Arthroplasty Surgery Simulation that optimized usage in Unity

Learned Substance Painter in less than a month to problem solve texturing assets for compatible functions such as creating the realistic transparency for tendons

Produced instructional videos to acquaint incoming interns with the Unity work process pipeline

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EDUCATION

Rowan University Completed in 2022

Bachelor of Fine Arts in Biomedical Art & Visualization

Minor in

Biological Sciences

Certificate of Undergraduate Study in Game Media Design PaleoArt & Visualization

PUBLICATIONS

Henry J. Austin Health Center Impact Report 2023 - 2024

- Henry J. Austin Health Center Teledentistry Promotional Videos in English and Spanish 2024
- "2019 2022 Biomedical Art and Visualization" BFA Maior Book

Edelman CCCA Student Showcase

Rowan University's 20 - 21 "The Gallery Book"

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Redefining Community Healthcare

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ITA LTH States Z N B Soz n 2024



Mother's Day Enviando amor a todas en el Día de la Madre g Community Healthcare defining Community Healthcare AUST 07.68 **Riley!** ley valora la tranquilidad, y con su dispositivo intrauterino (DIU) de HJAHC

Sending love to all on

HEALTH CENTI The center for wellow

que tiene una tasa de efectividad del 99%, tiene todo bajo control





student athlete!

With the contraceptive implan njoying over 99% effectiveness for up to 3 years.







estudiante atleta

Con el implante anticonceptivo

In some instances, being able to combine the languages together worked well. In others, became a problem with too much text on the slide. Creating a balance became the priority and overall I believe creating these visuals were effective.





2024

Social Media Facelift

PROJECT BRIEF

Over the course of my AmeriCorp VISTA service, I worked to uplift the social media visuals at my volunteer site, Henry J. Austin Health Center. The challenge to move away from a templated look to a more dynamic and engaging one proved difficult, especially considering all designs were required to be in English and Spanish.

Various Social Posts created for Henry J. Austin Health Center Digital, Adobe Illustrator



GRAPHIC DESIGN & MARKETING

Social Media Evolution Timeline

May 2024

More short videos created. Additionally, more campaign related content developed.





 Heart Disease • Cancer Chronic Lung Disease (COPD

Experimenting in finding alternative methods to create cohesive posts with both English and Spanish on the same slides.

July 2024

Getting community involvement with social posts to not only give patients medical resources, but community events as well.







Promotional Pieces



Colorectal Cancer Awareness Resident Poster Digital Printed, 18 in. x 24 in. 2024 Created in both English and Spanish



PROJECT BRIEF

A research poster requested by nursing residents to help inform patients in the waiting area about colorectal cancer screenings. This was hung up in the health center and measured the amount of QR code scans, website visits, and overall impact in that area of Trenton. Additionally, smaller handout flyers that summarized these posters were created and distributed.



GRAPHIC DESIGN & MARKETING



Various Flyers Promoting Services and Opportunities at HJAHC Digital Printed, 8.5 in. x 11 in. 2023 - 2024

PROJECT BRIEF

Different flyers requested within the organization over the past year. Content was given to me to design each flyer to match the organization's branding style. All were printed and given out to patients and other related audiences.

Campaign Creation

PROJECT BRIEF

There were a total of four different campaigns I contributed to between 2023 and 2024: Teledentistry promotion, Title X Awareness, Colorectal Cancer Screenings, and the organization's annual Impact Report. Each campaign prioritized a different medium to be usage in achieving their respective design goals.

Teledentistry

PROJECT BRIEF

Teledentistry focused on video, in both longer and shorter formats, to promote its services as well as optimal situations to schedule an appointment. There was no funding given by its grant, so all the recorded footage, audio, and production was done by myself. In total, six videos were created with two being long form promotional videos in English and Spanish, and four short form videos describing real life scenarios.





Title X Awareness

PROJECT BRIEF

Title X Awareness focused on social media posts and printed materials to inform the community about different contraceptive methods offered by the health center. This project centered around creating a narrative using "profiles" to describe the different contraceptives in addition to printed flyers distributed across the health center locations.



screener type.

GRAPHIC DESIGN & MARKETING

Colorectal Cancer Awareness **Colorectal Cancer Screenings**

Colorectal Cancer Screenings focused primarily on social media to advertise the services, although two videos were also created to give a broader amount of information for the community. Three themes were chosen to encourage patients to get screened for colorectal cancer: appealing to emotion, explaining with facts or logic, and having a set of humorous posts. All themes succeeded in informing patients of the









Impact Report PROJECT BRIEF

The annual Impact Report is a 40 - 50 page publication that emphasizes the achievements, stories, and news within the organization. I had the wonderful opportunity to design, revise, and send everything to print.

Click here to view



Ink 2022

-storey or right side + X-ray on the left * Preproden = Stankeden: Both ne occurring at the same time! Up to Balter inasi

MEDICAL ILLUSTRATION

Surgical Observations Entry #3: Total Mastectomy and Breast Reconstruction

PROJECT BRIEF

Direct observations recorded from the O.R. of a woman receiving a total mastectomy followed by a complete breast reconstruction with tissues being taken from the abdomen. (Translated from sketchbook to digital.)





Right Partial Mastectomy (Lumpectomy) with Intraoperative Ultrasound Digital Illustration 2022

PROJECT BRIEF

Designed to educate about the surgical procedure of a mastectomy, this layout depicts a partial mastectomy operation steps. The simple vector illustrations support conveying a clear concept by adding line thickness, eyelashing, and contrasting values.

Clinical Case Study: Laparoscopic Sleeve Gastrectomy Watercolor and Digital Layout 2022

MEDICAL ILLUSTRATION



CLINICAL CASE STUDY: LAPAROSCOPIC SLEEVE GASTRECTOMY

Sofia Monaco, Biomedical Art and Visualization Major, 2022 Faculty Advisor: Sara Jarret MFA CMI Dr. Patel, MD, FACS



Abstract

A laparoscopic gastric sleeve is one of few possible surgical operations that help to reduce weight in obese individuals. This procedure works to control an appetite hormone in the stomach, ghrein, by sectioning its producer off from the rest of the stomach. Several preoperative preparations are necessary such as various mental and physical evaluations, nutritional and weight loss planning for post-operation, and overall medical clearance to proceed with surgery. Ohy small incisions are made during this surgery since a laparoscopic scope is utilized; all surgical steps are performed in a closed system. Results are generally successful with fatalities caused by the surgery being rare; however, it is utilinately dependent on the patient to continually work towards losing additional body weight post-op.

Introduction

LSG Surgery, also known as Laparoscopic Sleeve Gastrectomy or Bariatric Surgery, is recommended for individuals who are severely overweight. These recommendations are based off of the individuals body mass index (BM), where a BMI more than 40 qualifies the individual for surgery. For individuals with a BMI greater than 60, LSG is a safer option for primary surgery to lose weight before receiving a more extensive type of weight-loss surgery. However, the higher an individual's BMI is, there is a higher potential for risks during surgery. This operation aids in reducing the body mass index by preventing excessive consumption through surgical hormone control. Within the stomach, a structure called the fundus produces the hormone ghrelin which controls appetite signals. Removing about 75 - 80% of this structure, depending on the severity of obesity, creates a narrower gastric sleeve. As a result, the individual will feel less inclined to consume unnecessary calories by reducing the concentration of ghrelin.



Anatomical Orientation





Figure 2, Identifying Structures. Primarily, important landmarks must be identified in order to properly proceed with the surgical procedure.

lucosa, the stomach is located underneath this layer

Figure 5. Extraction of the Fundus. After completely sealing the fundus from the stomach, it's retracted through one of the trocar ports.

Figure 3. Gastric Mobilization. Structures must be released from

surrounding fat tissue through cauterization to mobilize the stomach. Three key regions of the stomach must be mobilized before extraction, stapling, and sealing can begin: the fundus, the antrum, and the cardia.

Lanarosconic



Figure 4. Gastrectomy.

Staple-line reinforcers seal the fundus from the rest of the stomach. Debris or any particles from cauterization are flushed out with saline and a suction tube.

Stap

Postoperative Directives

The patient will remain in the hospital for a few days in order to monitor normal breathing, stable vital signs, and okay oxygen levels within the blood. A catheter was will remain in the patient's bladder until the day after surgery or longer. A nasogastric tube will remain to help determine if the patient's stomach is healing well.

Activity is an important aspect in recovering from this type of surgical procedure as well, and usually the exercise programs begin while the patient is still in the hospital. Simple exercises such as walking around helps with blood circulation throughout the body. Physical activity also helps to prevent pneumonia, blood dots, and constipation in addition to losing weight. Breathing exercises are also recommended after surgery while using an "Incentive Spirometer" every hour, these exercises help prevent pneumonia, lung collapse, and other possible breathing problems.

Discussion & Conclusions

This procedure can provide long-term weight loss; however, it ultimately depends on the lifestyle changes made by the patient to enable this long-lasting outcome. Studies show that it's possible to lose approximately 60% of excess body weight within two years. By following the guidelines post-surgery, the patient is able to overall improve their quality of life.

As with any other major surgery, sleeve gastrectomy can pose potential health risks. Short term risks include excessive bleeding, infection, blood clots, lung or breathing problems, or leaks from the cut edge of the stomach. Longer term risks include gastrointestinal obstruction, hernias, gastroesophageal reflux, low blood sugar, mahurtition, or vomiting.

References

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plan (2012) (page comp) There Galaxies up Converse, John Holpins, Makina Huji, Kwandapalan et alian and Jaka Makina Huji (an Angel Chai, Alga C

Figure 1. Trocar Port Placement for Laparoscopic Surgical Instruments The patient should initially be placed in a supine position and once the ports have been placed they should be moved in Trendelenburg position. The Trendelenburg position allows the surgeo better access to operate on the patient's abdominal region, the main region being operated on

Preoperative Directives

Extensive evaluation is required when determining the necessity or level of surgery needed. This evaluation should be an aggregated assessment collected by an interprofessional team comprising of endocrinologists, dieticians, psychologists, anesthesiologists, nurses, cardiologists, and the surgeon. All these evaluations are crucial in order to ensure a positive outcome during as well as after the surgical procedure. A psychologicalevaluation, nutritional evaluation, weight loss plan, and overall medical clearance are needed before surgery can be considered.

PROJECT BRIEF

Designed to educate about the surgical procedure of a laparoscopic gastrectomy, its homage to Frank Netter's Anatomical Atlas of watercolor is a key focal point. To support a complete understanding of the procedure, extensive research was performed.



MEDICAL ILLUSTRATION



PROJECT BRIEF

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Illustrated to bring diversity through the form of printable handouts depicting various physical therapy exercises. These changes provide relatability and inclusivity to its adolescent audience of the Children's Hospital of Philadelphia (CHOP). Examples of completed vectorized pieces displayed on the following spread. These pieces are adaptations and improvements of the pre-existing style utilized by CHOP.









MEDICAL ILLUSTRATION



INFORMATION DESIGN



ANIMATION BRIEF

Influenced by the infographic to the left, assets were taken and translated into a motion graphic in order to convey the main defense mechanisms of the Greater Blue-Ringed Octopus in an alternative media.





Muscle relaxations allow more light to be reflected creating bright neon blue rings...





while muscle contractions retain its natural coloration, preventing light from intensly reflecting

Defense Mechanisms of the Greater Blue-Ringed Octopus Digital Illustration and Animation 2022

The Greater Blue-Ringed Octopus is both poisonous AND venomous, so it's not the best snack for predators!

CLICK HERE TO VIEW THE ENTIRE ANIMATION



INFORMATION DESIGN

PROJECT BRIEF

As part of the BFA Senior Exhibition, this digitally illustrated series of posters aim to showcase the unique camouflaging characteristics of the Planthopper, Northern Walkingstick, and Orchid Mantis. Vector supplement not only depicts life size measurements, but also informs about an additionally interesting personality trait to each insect.





Northern Walkingstick 2022 Digital Media 30 in. x 40 in.



2022 Digital Media 30 in. x 40 in.





But who's this little bugger here?

And why isn't he colorful too?

Panther Chameleon Interactive Digital Illustration 2021

Instead, Iridophores are *reflective cells* which give the illusion of color through light refraction. Depicted below is a generalized chromatophore cell there would be color pigment located inside.





24

Chameleons, as well as other organisms such as cephalopods, contain unique layers of cells underneath the epidermis, or outer skin cell layer.

Iridophores, Erythrophores, Melanophores, and Xanthophores, are all specialized chromatophore cells, however, only the latter three cells contain actual pigment.

The chameleon will signal these specialized cells through neuron communicative signals sent from the brain. Once received, the chromatophores translate these signals to generate the color.



This chromatophore would have pigment located within a vesicle. These cell layers are connected much like neural networks by the microtubules.



Skin Layers of the Chameleon

PROJECT BRIEF

Designed as an interactive component for individuals to refer to, this multi-page layout emphasizes relationship between an organism, its emotions, and the resulting cellular response.





a different color pigment, so a reflects on them then the beau





STORYBOARD BRIEF

Storyboards for the then unnamed animation consisted of loose sketches drawn in graphite. Each are relatively undetailed with arrows implying the intended motion of specific components. Additionally, rough time estimates of each scene were included as well as possible dialogue.

CONCEPT BRIEF

The focus of this project rooted in research was to take a complex scientific mechanism, such as how camouflage operates at a molecular level, and translate it into something fun for all ages to enjoy. Intending to be relatable to its audience, Reginald the Chameleon is showcased with his emotional response to 'seeing' the audience.

Camouflaging Chameleon Storyboard & Concept Art Digital Illustration and Animation 2020



CHARACTER DESIGN



CLICK HERE TO VIEW THE ENTIRE ANIMATION

Camouflaging Chameleon Digital Illustration and Animation 2020

ANIMATION BRIEF

Production of "Camouflaging Chameleon" began shortly after storyboard drafting. Each scene was translated to Adobe Animate where movement was ultimately added through motion tweens, key-frames, and PNG sequencing.













PROJECT BRIEF

Designed to be an informative interactive motion graphic, the real stars of the animation are the personable birds. Created in a simplified style, these characters highlight the different mating behavior methods that are displayed. This animation loop not only breathes life into the birds themselves, but also accentuate the statistics that go along with them.

CLICK HERE TO VIEW THE ENTIRE ANIMATION

PROJECT BRIEF

Designed to be a simple schematic in understanding chemical changes in pigmentation, these leaves were the most suitable muse in depicting the process. While being fully digitally modeled aids the visualization of strucutres, its layout also accentuates its cyclic nature.

Leaf Pigmentation

Digital Model and Layout 2019



Water Soluble Clay 2021

SCULPTURE BRIEF

In this forensic reconstruction, muscles were layed in order of deep to superficial while my personal head dimensions were utilized. Not only is this sculpture a great point of reference for human facial anatomy, it also helps to phyiscally visualize the muscle composition of the head.

Human Facial Anatomy



PROJECT BRIEF

Designed for an educational virtual reality simulation in conjunction with Rowan University's Virtual Reality Center, this specific module focuses on a Total Hip Arthroplasty surgery. Specifically, my contribution focused on creating models, reworking older models, and texturing the transparent tendons to be compatible with the game engine. The overall goal to texturing these assets was to do so in anatomical accuracy.



Rowan University Virtual Reality Simulation: Total Hip Arthroplasty Surgical Procedure Captured Screenshots Digital Model and Texture 2021 - 2022 Team collaboration





Full anatomy from left to right: Anterior View, Lateral View, Medial View, & Posterior View

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