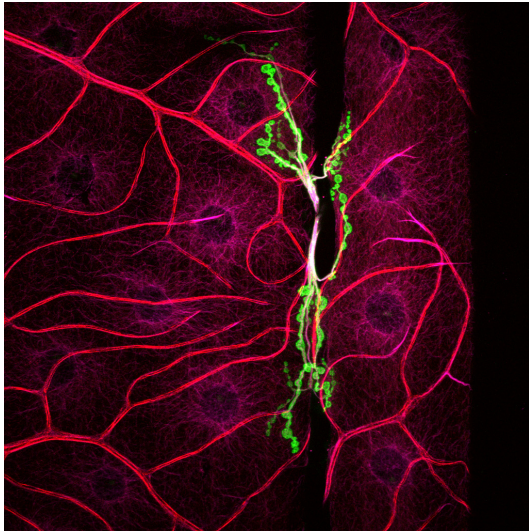


Research as Art Competition

JAN 26
2023



Jefferson
Thomas Jefferson University
HOME OF SIDNEY KIMMEL MEDICAL COLLEGE



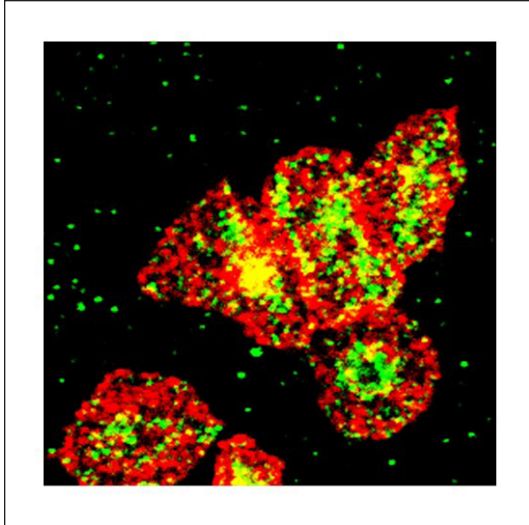
Neuron to Muscle | Alison DePew

Creating connections is an essential part of life. Cells of the nervous system, called neurons, form structures called synapses in order to communicate. This communication is critical for life as we know it, allowing us to think, move, and sense. Yet, these connections are remarkably similar amongst different animals. Here, a neuron of a fruit fly (green) makes contact with a muscle, while microtubules (red, magenta) form elaborate branches that make up the infrastructure of the cell. Understanding the basics of these connections in the fruit fly allows us to draw parallels to the human brain to better understand disease.



New Mothers in COVID-19 | Elizabeth Critchlow and Rosemary Frasso

This participant generated photo was part of a study exploring the experiences of new mothers during the pandemic. Photo-elicitation-- participants take images to help describe their experiences during interviews. Many participants spoke of grief/loss in the postpartum period-- navigating loss of loved ones to COVID-19. Others highlighted the loss of rituals like baby showers, loved ones meeting the newborn & photography. "...this my first baby, so I wish I could have had a baby shower. Um, I'm not sure if I'll have another baby, so I feel like that's something that I would have wanted to--would have wanted to experience..."



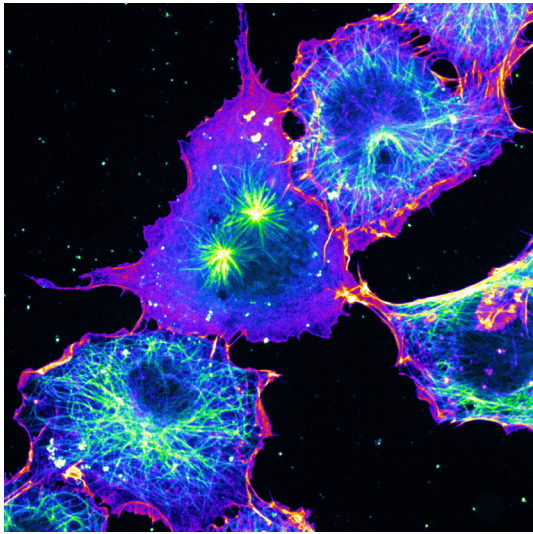
Beautiful Bird and Flower Glowing at Sunset | Sruthi Thekke-Veedu

Beautiful bird and a flower glowing during sunset- This image looks like a beautiful bird trying to sit on a flower or going to suck honey. It is glowing due to sunset beams. Scientifically, it is an immunofluorescent image of platelets spread on a fibrinogen surface and the two proteins labelled with two colored (green and red) fluorescent antibodies. The place where green and red together shows in yellow.



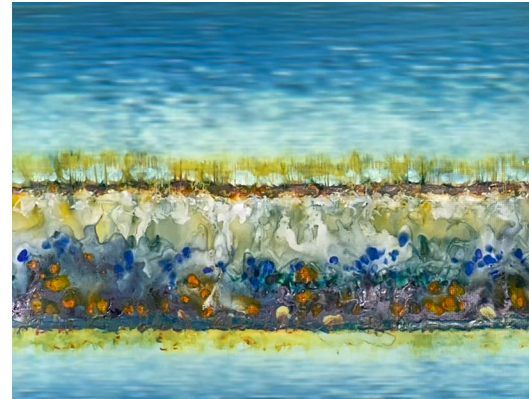
Brother | Elizabeth Weiss

This bowl represents an exploration of my relationship with my older brother through exploratory art research in Studio Techniques and Materials of Art Therapy. From childhood to adulthood, our relationship has changed greatly, heavily influenced by his development of a psychotic disorder in his early 20s. I'm still exploring what our relationship can hold now, as I move in between caretaker, case manager, parent, and sometimes still sister. It's not what I thought it would be or what it used to be able to hold, but there are new possibilities, and there is still beauty.



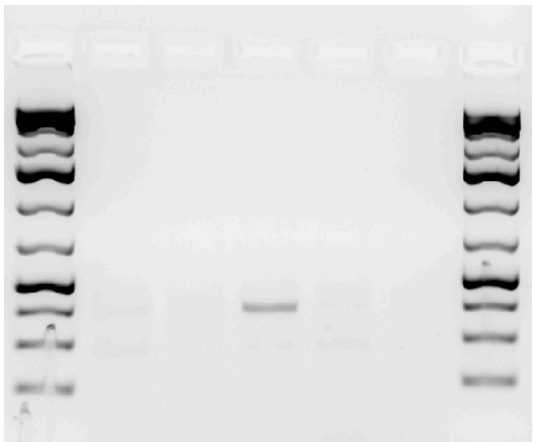
Cytoskeleton in Division |
Stephen Tymanskyj

All cells differ in size and shapes to achieve precise functions and this is achieved through remodeling of the cytoskeleton. Microtubules (blue/green), long, dynamic filaments and actin (red/orange), the most abundant protein in cells, coordinate to control cell shape and growth. During cell division the cytoskeleton coordinates to pull apart the cell splitting into two new cells (middle), a process which goes unchecked in cancer, making targeting the cytoskeleton an important therapeutic target. This image shows kidney cells magnified 100 times, with fluorescently labelled microtubules (green/blue) and actin (red/orange) taken on a spinning disc microscope.



Conflict Zone 2 | Lyn Godley

My artwork that offers an immersive experience for the viewer. The watercolor imagery is based on theories of boundary states where related pairs of concepts are defined by their opposition. By allowing certain areas to remain static and other areas to become animated by projecting animated imagery onto the image, the animation creates dialogue between opposing horizontal bands which read as landscapes. My research is based on Distraction Therapy where a VR headset creates an immersive experience which distracts the patient from discomfort. I am attempting to create immersive experiences without the use of a VR headset.



Ladder of Life | Santosh Yadav

DNA band on a gel showing single band in between two ladders of DNA. Single band in the gel represents a successful attempt from six months of experimentation to generate a mouse lacking a gene. The gel picture represents simplicity of result behind a complex and time-consuming experiment. The picture represents one step forward in understanding complexity of life thus, I call this image as "Ladder of Life"



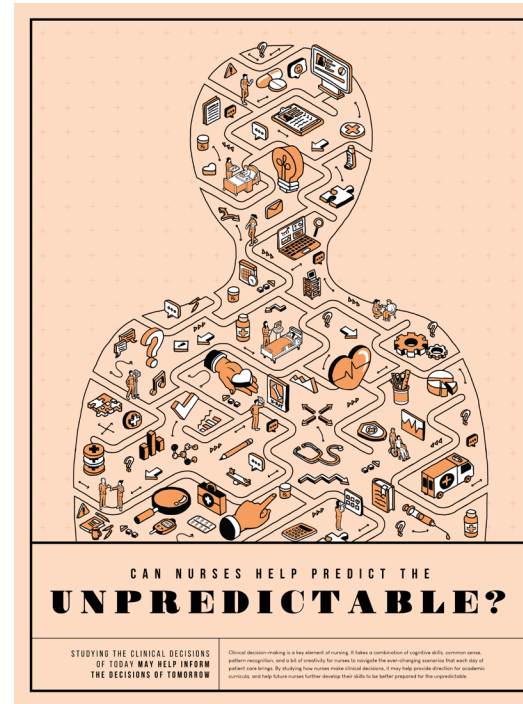
Dog | Adrienne Gyorfi

Although these embroideries of dogs may not appear to be related to dentistry, the subject, technique and manipulation of media used to create them are reminiscent of procedures performed by a dentist. Dogs historically have been used in studies of periodontitis (Ericsson I., Experimental periodontal breakdown in the dog. Scand J Dent Res. 1975) and endodontic therapy to determine how different conditions manifest in human dentition. Each time I poke myself with the sharp needle used for these embroideries I remind myself the sensation is not much different from the pain patients feel when receiving anesthesia before a procedure.

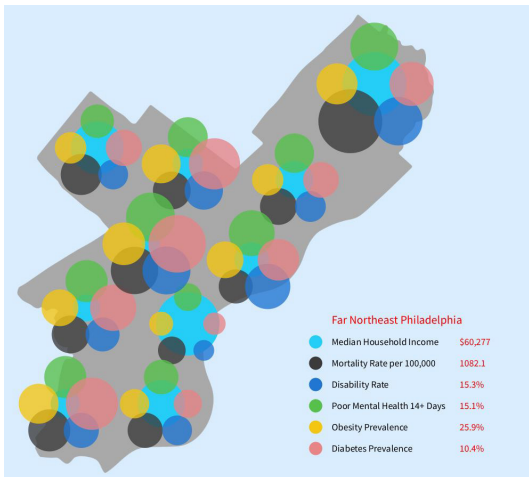


Patient Identity | Savannah Patterson

"Patient Identity" (12" x 9"; made with pill bottles, resin, acrylic paint, cardboard). This piece is a study of how the exploration of the patient identity among mental health clinicians can strengthen the client-clinician relationship and improve quality of care. It explores the impact of clinician vulnerability and self-disclosure by clinicians, shown by my name and medication left on the bottles for display as well as the openness of the bottles. This piece also studies how repurposing medical supplies can help empower chronically ill patients.



Patient Maze | Gabrielle Santulli
My research topic examined the clinical decision-making skills within the field of nursing. This poster aims to visualize the decision-making process that nurses use as they navigate the unpredictable pathways of patient care. I used various illustrations throughout the "patient maze" to visually represent the cognitive skills, technology, and thought processes that nurses use to make important judgement calls. Ultimately, the learnings from this research seeks to inform and improve the decision-making skills of future nurses—so there was an interesting angle about "predicting the unpredictable" that I took with the poster headline and body copy.

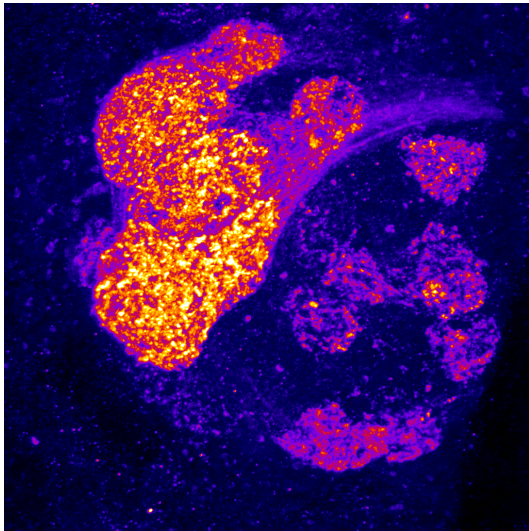


Philly Healthcare Map | Elon Skolnik

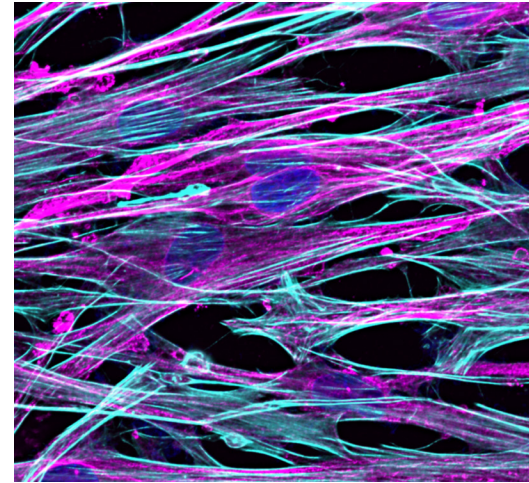
Using the official City of Philadelphia color scheme, Sanjana Shah (sts140@students.jefferson.edu) and I created this data visualization map from a citywide public health assessment. This interactive visualization answers the research question: "what is the relationship between income and health?" by comparing median income against five key health factors in the neighborhoods of Philadelphia. One can see that nearly linearly, as income increases, health problems increase. Users can move their mouse around the screen to see a popup of the key data in each neighborhood. Progress can be viewed here: rb.gy/cvwno8



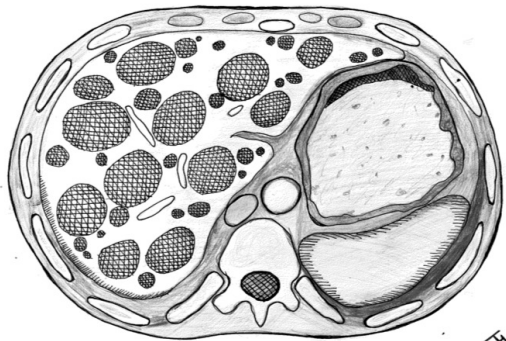
Journeys | Rachel Brandoff
40 journeys is a project designed to build empathy, community, tolerance, and connection by engaging 40 individuals simultaneously in a reflection of a journey in their life and the metaphorical stops in the road, as well as consideration of how they and others approach those road stops. Participants had ample room to consider shared experiences, parts of their journey that inspire pride or shame, desire to share or remain private, and how to engage in inquiry of parts of our human journeys. This research invited community relationship while facilitating individual insight.



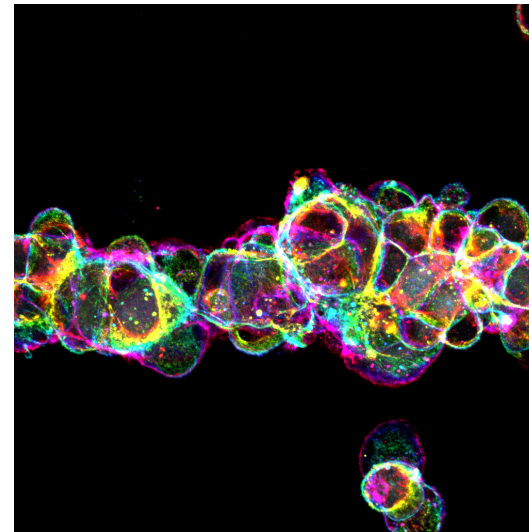
Glomerulus Shining |
Juan Gonzalez-Duhart-Rodriguez
 Glomerulus shining is a visual representation of smell. The common fruit fly is remarkable at smelling. This picture shows thousands of synapses in hundreds of neurons that the fly uses to smell the world around it. Images like this serve as a mirror to human biology and inform our understanding of how our nervous system builds the brain connections necessary for us to not only smell, but hear, taste, feel and see the world around us.



Smooth Muscle Lungs |
Elham Javed
 Smooth muscle cells are the contractile unit of airways. During asthma, smooth muscle cells are unable to relax, thereby constricting the airway and preventing the flow of air through the lungs. Here we show the cytoskeleton of human airway smooth muscle cells that play an integral role in its function, of contraction and relaxation. The primary contractile unit- actin was labeled with Alexa-488 Phalloidin (shown as cyan), B-tubulin labeled with Alexa-594 (shown as magenta) and DAPI (shown as blue).



Death by Innumerable Circles |
Jaclyn Heilman
 As a result of modern medicine, Stage 4 Colon Cancer can be a chronic disease for many. The liver is often the first place that colon cancer will metastasize. This sketch illustrates a cross-section of an abdominal CT scan revealing innumerable metastases of the liver. This sketch holds a dually powerful meaning to the artist. Not only is she pursuing a career in Colon and Rectal Surgery but is also grieving the recent loss of her father after fighting Stage 4 Colon Cancer for three years.

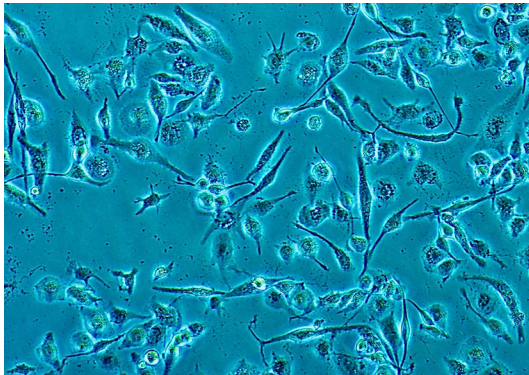


Nucleus Pulposus | *Kimheak Sao*
 A color-coded, composite image of Nucleus Pulposus Cells isolated from a rat's intervertebral disc cultured on a soft substrate. This soft material influences cells' shaping and clustering to resemble how they would interact in the human body. This helps us answer fundamental questions about how cells may behave in healthy versus degenerated, fibrotic tissue in a Petri dish. We can then better understand the underlying mechanisms of disease states and elucidate targets of interest.



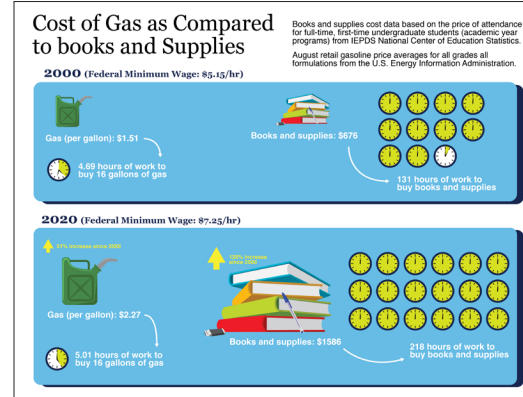
Nurture | Cynthia DeLago

My life's work has been to strengthen and support parents as they nurture their children. During my tenure as Director of the Pediatric Clinic at Einstein Medical Center, we implemented group well-baby care, an alternative model of care that has been found to enhance parenting and parents' social support. Since 2014, we have researched group well baby care and published two peer-reviewed articles in 2018 and 2021. In 2022, I created "Nurture" for our pediatric waiting room. This painting is about the village it takes to nurture children: parents; our community of healthcare workers and historical child advocates (see photocollages).



Macrophages | Nicole Naranjo

Cells of the innate immune system greatly contribute to anti-tumor immunity by directly targeting cancer cells. However, in some dreadful cases, our immune cells, such as macrophages, turn against ourselves and promote cancer. Here we show the cell culture of human M2 macrophages which are a type of macrophage that has shown to contribute to tumor progression in different cancers.



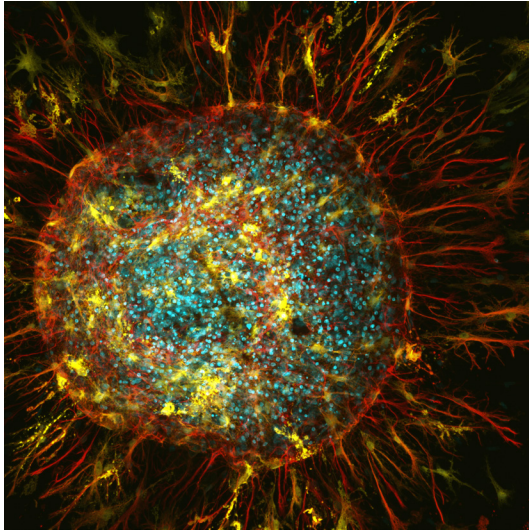
Cost of Gas to Textbooks Data Viz | Anne Therese J. Namocatcat & Daniel Verbit

After learning about food insecurity during the pandemic we designed this graphic to show the change in the price of gas vs the price of school supplies based on the minimum wage at the time of the data. While the minimum wage has gone up, it has not kept pace with the cost of books and supplies. This requires students without other sources of funds to work more hours. The direct impact of this is a reduction of hours students have available for schoolwork and extracurricular activities while still having time for good sleep hygiene to perform at their best.

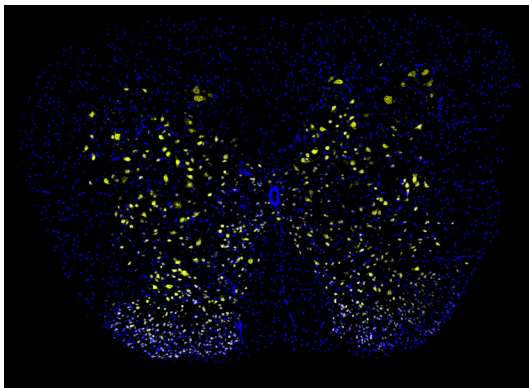


End of Life Care | Maurice Gross

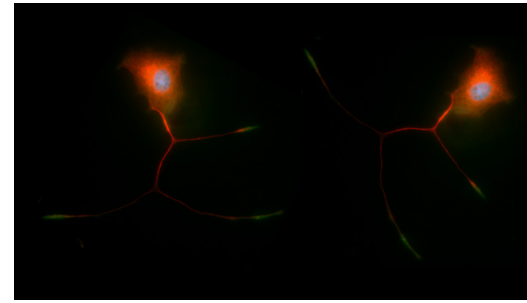
In caring for patients at end of life I have created a watercolor pencil sketch of a young woman who struggled with SUD as well as terminal cancer. I got to know her and her mother well. Her mom and I are quilters. I created the image using facets of the relationship that bonded us together. Doctor-patient-Caregiver. She struggled to have peace and healing in her journey. My creation attempts to honor that creating a lasting memory to our journey together.



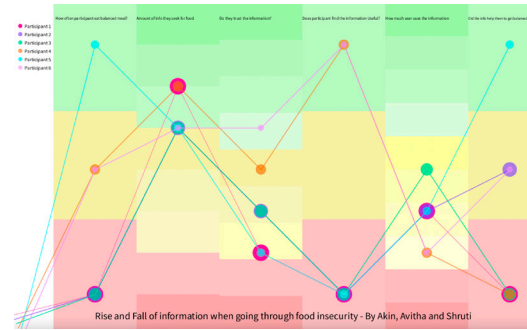
Astrosun | *Karthik Krishnamurthy*
 "Astrosun"- Image represents fluorescent micrograph of a group of supporting cells called astrocytes (labeled in red) derived from the spinal cord of a mouse. Nuclei of these astrocytes are labeled in cyan. These astrocytes were experimentally manipulated to express amyotrophic lateral sclerosis/ (ALS) aka Lou Gehrig's disease linked toxic protein called SOD1-G93A labeled in yellow. Astrocytes expressing this toxic protein lose their nurturing effect and kill nearby motor neurons which in turn affects muscle strength in ALS patients.



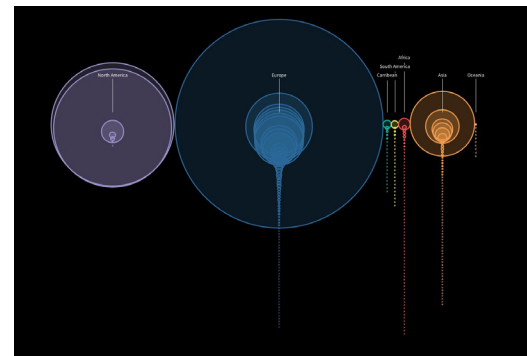
The Butterfly Effect | *Shashirekha Shamamandri Markandaiah*
 "The butterfly effect"- Image represents fluorescent micrograph of mouse spinal cord labeled for a group of neurons called motor neurons (labeled in yellow). The nuclei in the spinal cord have been labeled in blue. A distinguishing feature of these motor neurons is their ability to communicate with muscles throughout the body. The motor neurons accomplish this using a neurotransmitter acetylcholine which sends signals to muscle to contract. In essence the motor neurons even though in the spinal cord control muscle movement similar to a butterfly effect.



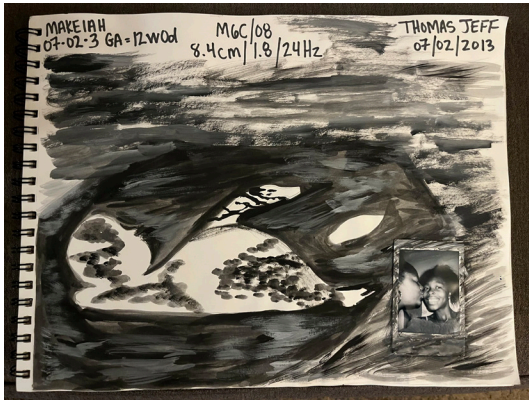
Neuronal Choreography | *Jordyn Karliner*
 Neuroscientists describe the process of brain cell development and migration as a choreography performed by neurons. Here, this choreography takes on a literal depiction. Neuronal cells, visualized through fluorescence microscopy, adopt the form of a dancer performing classical ballet choreography.



Food Insecurity Map | *Shruti Raghava, Avitha D'Souza, Akinboluwaji Agboola*
 This is the survey of food sources in Philadelphia showing rise* and fall of information of participants when going through food insecurity.



Diversity in Canada | *Yash Raje*
 My image is a visual representation of the diversity of Canadian citizens, using the program Processing. The image is a representation of a 2016 census by Stat Canada, which asks Canadians of their country of origin. The data is formatted and grouped into continents and each country is represented on the canvas as an ellipse. The data is grouped and colored by continent to better allow viewers to see the trends between Canadian and their origins. I created this as a Canadian who has always been proud of my country's diversity, and I wanted to showcase it visually.



Sonogram | Makeiah Milbourne

This piece represents my relationship with my daughter Ava. Relationship meaning the bond that was created before I gave birth and the bond we have now. It's a interpretation of her sonogram picture and an actual photo from this year. Our relationship means to much to me, our bond is so strong and she's the most important person in my life.



Rainbows | Rachel Brandoff

In a world harshly separated in the aftermath of the COVID-19 lockdown, people everywhere struggled with how to forge and maintain community connections. This was also true in families with young children. The community rainbow project, written about in Philadelphia news media, served as a tool for connecting youth with their community at a distance. The hope was to make the world a place not to fear, despite the need to exercise caution. We are still tabulating the results, but projects like the rainbows helped to forge connection.



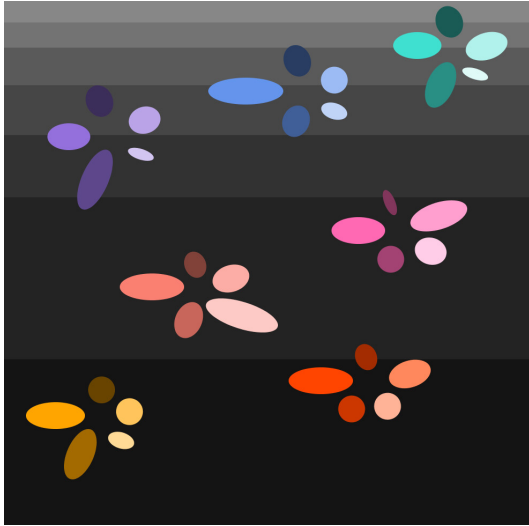
Survivor | Image Credit: Katherine Cambareri and Rosemary Frasso

This image is part of a study exploring bias against victims of sexual assault. These were shoes worn by a survivor at the time of an assault. The photographer, Katherine Cambareri, an MPH alum, and I have been working together with several students to dismantle victim blaming through art. To date, two physical exhibits and one virtual exhibit have been held on campus. We have surveyed and interviewed visitors. Data collection is ongoing.



Breaking the Chain Reaction | Jacqui Johnson

This collective art piece was created during a weekly clinical art therapy group facilitated inside the local jail. This research examines the experiences of incarcerated women in Philadelphia, and their reflection on how they fit (or don't) into society. An important component in this piece was measuring the community response and impact by encouraging audience members to respond creatively to the messages expressed. Themes emerged of love, loss, goals, and hope. Breaking the Chain Reaction illustrates the arts as a healing mechanism; emotional healing through art and creative expression for those living in pain, grief, fear or stress.



Untitled | Jennifer Hegelein

Survey data: patients who wear cervical collars. Image: coded in Processing. Each flower represents a different category- adjustability, cost, breathability, ease of use, flexibility, comfort, and overall use. For each, they ranked their experience as very dissatisfied, dissatisfied, neutral, satisfied, or very satisfied. Each petal represents a ranking- petal size relative to # of patient's answers. Neutral ranking is the base color, satisfied and very satisfied are tints lighter, dissatisfied and very dissatisfied are shades darker. The background is the 2nd data set- each gradient representing the most commonly cervical collars used, relating to their answers in data set 1.



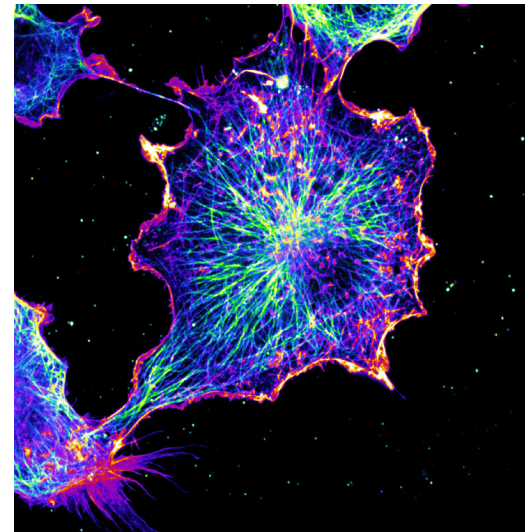
Dog2 | Adrienne Gyorfi

Just as teeth are cut by parts of a millimeter to be prepared for restorations completed with tooth colored fillings or porcelain to appear as close as possible to an uncut tooth, these embroideries are constructed in small increments of appropriate material with attention to color, value, and hue to achieve an appearance as close as possible to the original subject. And finally, as in dentistry where the process of restoring dentition can take months or even years, these embroideries serve as a reminder that sometimes hundreds of hours of work must be completed before a final image comes together.



Conflict Zone 7 | Lyn Godley

My artwork that offers an immersive experience for the viewer. The watercolor imagery is based on theories of boundary states where related pairs of concepts are defined by their opposition. By allowing certain areas to remain static and other areas to become animated by projecting animated imagery onto the image, the animation creates dialogue between opposing horizontal bands which read as landscapes. My research is based on Distraction Therapy where a VR headset creates an immersive experience which distracts the patient from discomfort. I am attempting to create immersive experiences without the use of a VR headset.

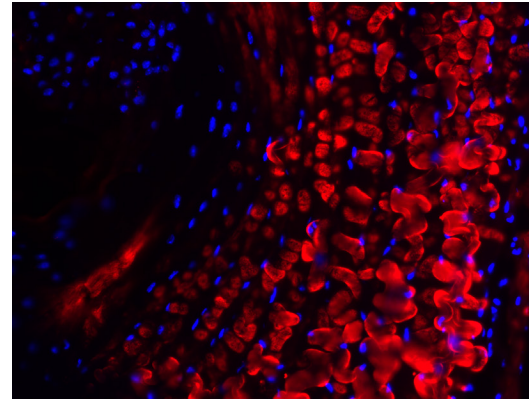


Microtubules | Stephen Tymanskyj

All cells differ in size and shapes to achieve precise functions and this is achieved through remodeling of the cytoskeleton. Microtubules (blue/green), long, dynamic filaments and actin (red/orange), the most abundant protein in cells, coordinate to control cell shape and growth. Actin is predominately found at the edge of the cell providing structure, while microtubules extend radially from the center, providing tracks for the trafficking of other proteins. This image shows a kidney cell magnified 100 times, with fluorescently labelled microtubules (green/blue) and actin (red/orange) taken on a spinning disc microscope.



Medical Box | Savannah Patterson
 "Medical Box" (13" x 11") This piece is a study on the impact of chronic illness and medical trauma on mental health. It also further explores the value of recognizing the patient identity and vulnerability among mental health clinicians as well as the repurposing of medical supplies to empower chronically ill patients. "Medical Box" is made with insulin pump supplies (insulin tubing, vial, and syringe), plaster, ink, acrylic paint, and found objects on wood.

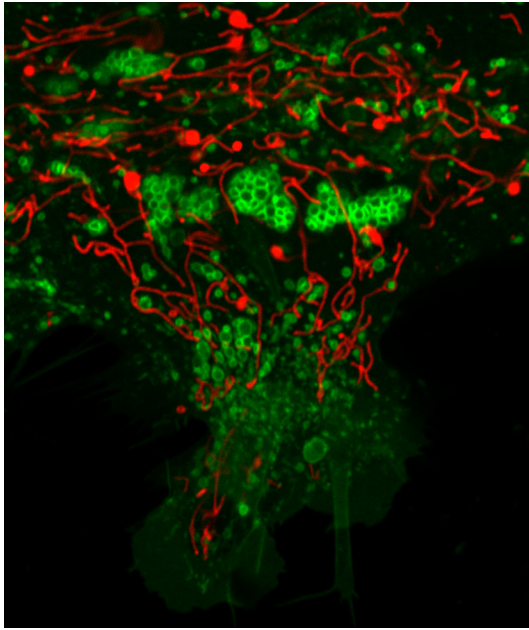


Collagen Bundle | Kimheak Sao
 Thick Collagen I bundle of the intervertebral disc, which defines the Annulus Fibrosus compartment from Nucleus Pulposus compartment. One marker of disc degeneration is disruption of this collagen bundle. This staining shows healthy Collagen I in the intervertebral disc. (Red: Collagen I, Blue: Nucleus)

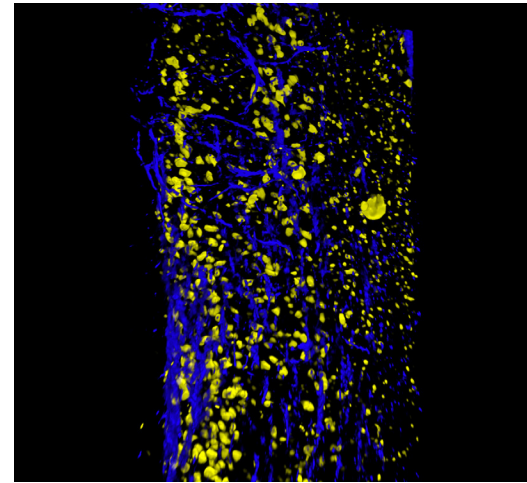
Trauma Mask | Rachel Woerner
 This is an example paper mâché mask that I created for a therapeutic art group that I facilitated at a residential rehab center. The purpose of the group was for clients to create a mask that reflected something meaningful to them. Often the theme of the masks seemed to center on trauma, recovery and addiction, feelings that were shown outside vs. inside, or sometimes superficial appearances. This mask was specifically created to represent what trauma would look like if it was shown in mask form. I found that the manner in which the masks were created seemed to reflect cognitive abilities, state of mind, and awareness/insight into thoughts, feelings, and healing process. I think this could be an important area of study.



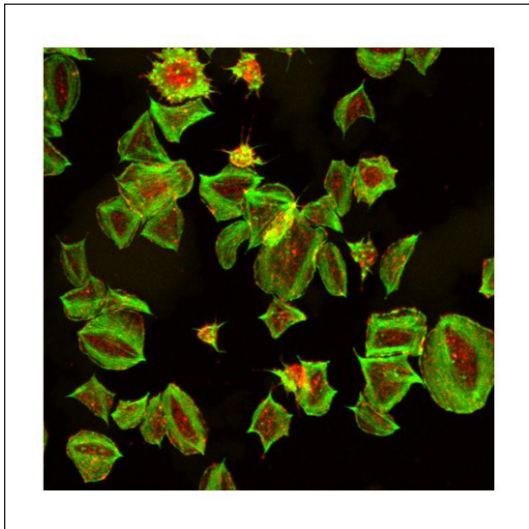
Skin on Skin | Gabrielle Santulli
 Newborn falls are increasing in hospitals at an alarming rate. Parents are encouraged to practice skin-to-skin contact, but it's easy to doze off while holding a baby when you're fatigued, sleep-deprived, or medicated. Dropping their baby is one of the biggest fears of new parents—and for good reason. Newborns are too fragile to risk even one slip. There is a proven solution that is as simple as it is effective. By introducing a hands-free support band, parents and newborns can experience the myriad benefits of skin-to-skin contact while staying free from risk. This poster is intended to capture the beauty of skin-to-skin bonding between parent and child—the intimate, formative moments that this research enables. Intrusive thoughts fade into the background as the band provides peace of mind.



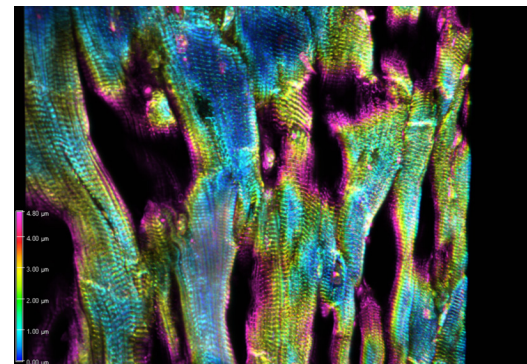
Christmas Tree |
Karthik Krishnamurthy
 "Christmas tree" - Image represents fluorescent micrograph of a human astrocyte labeled with two critical organelles in a human cell- mitochondria (red) and lysosome (green). Mitochondria are known to be the "power house" whereas lysosomes are known to be the "waste bag" of the cell. The close proximity of these two organelles is shown here and recent research studies recognize this proximity to be critical for their proper functioning in the cell.



See-Through Spinal Cord |
Shashirekha Shamamandri Markandaiah
 "See through spinal cord" - It is challenging to image a whole spinal cord due to the issue of diffraction of light due to the present of fatty tissue using traditional microscopy methods. Image represents mouse spinal cord cleared using Immunolabeling-enabled three-dimensional imaging of solvent cleared organs (iDISCO) which clears the spinal cord of fatty tissues. The spinal cord here is labeled for neuronal marker NeuN (yellow) and glial marker GFAP (blue). Fluorescence image was captured with a 20X objective of a confocal microscope (Nikon A1R) and represents maximum intensity projection of several planes.



It's the Time to Fall |
Sruthi Thekke-Veedu
 It's the time to fall- A mad wind made the flower and leaves come out of the tree. Beautiful Colored leaves along with flowers falling slowly. We can see flowers and buds in between. This is the actually platelets spread on a fibrinogen surface and proteins labelled with colored antibody. Red and green together shows yellow. Partially spread platelets looks like flower.



Cardiac Tissue | *Elham Javed*
 Cardiac muscle cells are unique, as they exhibit characteristics of both skeletal and smooth muscle cells. Here the image shows a cross section of a mouse heart showing the structural similarity between both skeletal and smooth muscle cells. The contractile unit- actin is labeled with Alexa-488 Phalloidin (shown as green), Troponin labeled with Alexa-647 (shown as magenta) and DAPI (shown as white). Actin is commonly expressed throughout all muscle types; however, Troponin is only expressed in skeletal muscles. This image is a xy plane view of a 3D image. Tissue depth is color coded as shown by the scale bar.



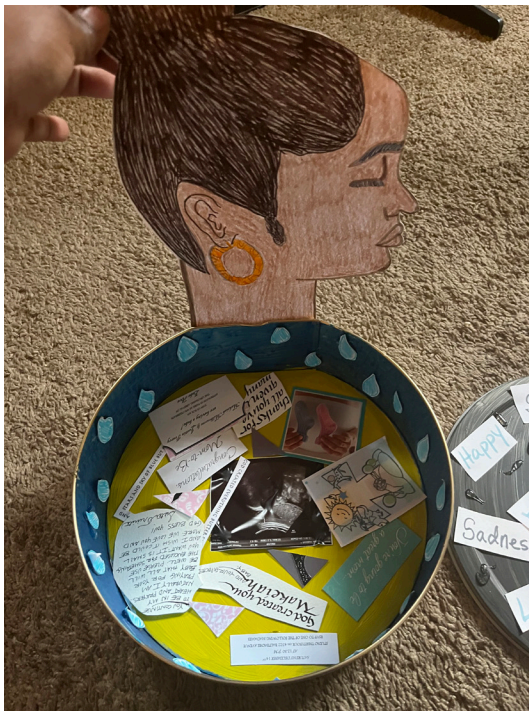
Voice | Rachel Woerner

This piece was created to represent keeping a sexual assault a secret and finally gaining a voice (open mouth) in order to heal. The foil pieces were intended to represent mirror shards symbolizing reflection and a broken or distorted sense of self. Mixed media pieces could be used to research symbolism and recurrent themes in sexual abuse victims and to study how creating a piece centered on trauma can be a non-verbal way of healing and processing the event(s).



Processing Conflict | Elizabeth Weiss

I created this collage image as a part of a restorative conversation within a working professional group after a conflict had occurred. This image explores the inner and outer forces at play while experiencing tension within a collaborative professional group. I explore the role the inner critic can play in groups, especially when comments from others may echo internal insecurities or hurtful voices of the past. The image suggests that inner knowing augments collaborative expression and cohesion. I also include the possibility of creation in the midst of injury and conflict. This piece speaks of the challenges of working in a group and its immense potential.



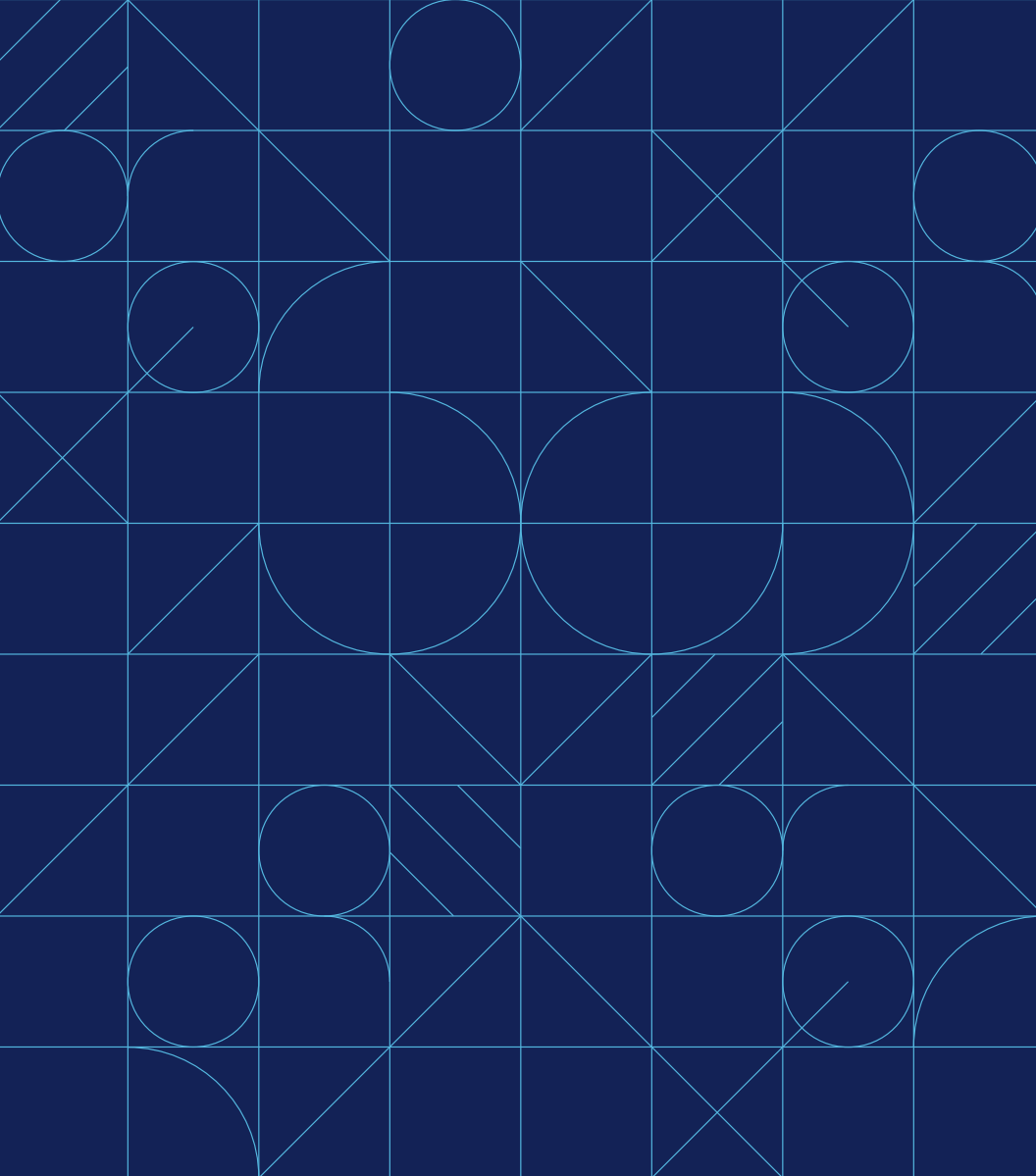
No More Tears | Makeiah Milbourne

No more tears - this piece reflects a time in my life when I went through Postpartum depression. It's a combination of cards given to me from my baby shower with thoughtful words that represented how I felt. I was able to overcome postpartum and creating this piece, I was able to reflect on the mother I've become.



Breaking the Chain Reaction 2 | Jacqui Johnson

A collective art piece was created during a weekly clinical art therapy group facilitated inside the local jail. This research examines the experiences of incarcerated women in Philadelphia, and their reflection on how they fit (or don't) into society. An important component in this piece was measuring the community response and impact by encouraging audience members to respond creatively to the messages expressed. Themes emerged of love, loss, goals, and hope. Breaking the Chain Reaction illustrates the arts as a healing mechanism; emotional healing through art and creative expression for those living in pain, grief, fear or stress.



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