



RESEARCH AS ART CONTEST



Thomas Jefferson
University

HOME OF SIDNEY KIMMEL MEDICAL COLLEGE



Jefferson's 2026 RESEARCH AS ART CONTEST

celebrates our faculty, students and staff who have an eye for the beauty in their research or scholarship. Our panel of judges selected a winner from two categories: Life Under the Microscope, reflecting cellular and molecular work; and Conceptual Art, which shows renderings of research observations, experiences and concepts in various media. They judged each piece based on aesthetic quality, meaning and originality.

This year, we had 44 submissions with representation from disciplines including neuroscience, textile design, microbiology, occupational therapy and architecture. Each work depicts the creative aspects of academic study that often go underappreciated. The images also do something that is rare in research: they invite the novice or uninitiated to interact with the topic, to bring their own experiences to bear in the interpretation and to appreciate research as art. We hope you will enjoy this year's images.

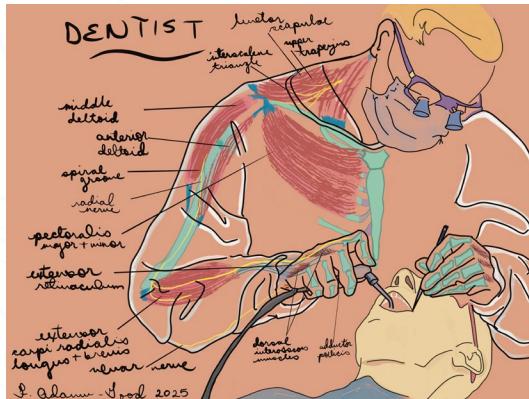
Learn About This Year's Judges



Renée Walker is an Associate Professor of Visual Communication Design at Thomas Jefferson University, exploring design, data and natural world intersections. She specializes in multi-sensory data visualization, making complex information accessible through visual and interactive experiences. Her work includes Energy Bodies — featured at Info+ 2025 at MIT — and research translating bird songs into animated visual forms.



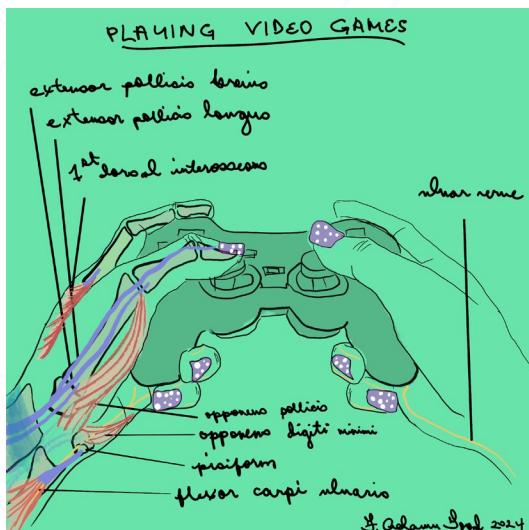
JoAnna Wendel is a science writer and artist living in Portland, OR. She currently works as a public information officer at the Pacific Northwest National Laboratory, where she writes about everything energy-related, from batteries to electrical grid science. She is also a professional cartoonist who illustrates the Wild Things comics series for Science News Explores.



Dentist

Fatima Adamu-Good

An educational schematic of a dentist at work depicting some of the unique musculoskeletal and neurological demands of this occupation. The combinations of cervical and trunk flexion while maneuvering the wrist and digits within a patient's mouth can take a toll after years of dental practice.



Playing Video Games

Fatima Adamu-Good

Playing video games with controllers or keyboards is popular as sport and for the casual enthusiast. But no matter the level of play there is risk of repetitive strain injury. This schematic is designed to educate laypeople about the unique musculoskeletal and neurological demands of gaming.



Echoes: An Immersive Exploration of Neurodiverse Spatial Perception

Severino Alfonso

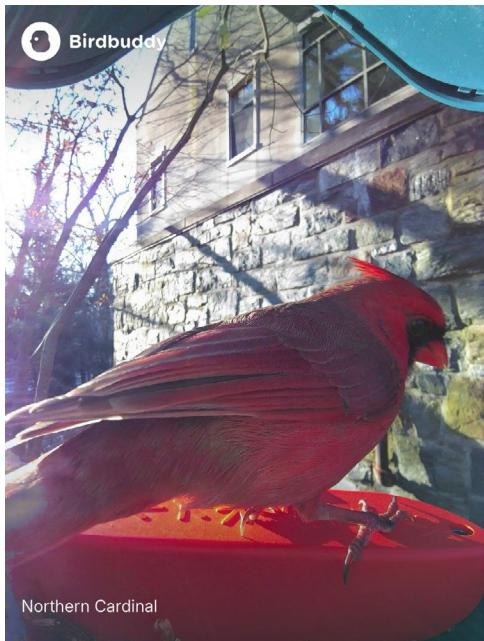
A view from the interior "self-reflecting moon" of the interactive installation "Echoes" currently exhibited in Milan. Built from wood and cork and embedded with experimental sensors, the structure unfolds across two interconnected environments: A collective outer space where light pulses and gradually shifts in intensity and color, and an intimate inner chamber with a shifting moonlight projection and sound that adapt in real time to the participant's movements and breathing, enabling a form of self-regulation and individualized retreat. Accompanied by the documentary VOICES, the installation invites empathy and awareness, challenging visitors to reconsider how space is perceived through neurodiverse lenses.

...caſi, fen. z³ tractatu p.c. pmo. vbi dicit ſic. Acu dem criſiſum z ppiñq; ad ſepationem morbi ſanguinis narium. qm̄ cōſequiſ expulſionen ei in vice vna. deinde eſt fluxuſ ventriſ poſte ſ. deinde vrina poſte ſudor. poſte a exiſture quā genere criſiſ pmutationiſ. Et c. ſequenti dicit qd̄em ſanguiniſ narium qñq; ɔſumit materia inum furioſarum z fit ſanitas ſtatiſ. Et poſte a poſte ſte gibbi epatiſ terminatur aut per fluxuſ ſanguiniſ narium in dextra parte aut per ſudorem ait am: ſed apa in cōcauо per fluxuſ ventriſ aut ſi iutuſomitu, z dicit q; fe. cauſon v̄plurimū b3 criſiſ ſanguiniſ narium aut per ſudorem ait nitum. ſed fe. a patiſ capitiſ nūq; habet criſiſ ſanguiniſ narium nec pipleumonie nec litargiſ eſiſ aliqñ b3. Et dicit q; cauſon aliqñ b3 criſiſ ſanguiniſ narium z ɔpletur per ſudoriſ hūdit ignatur q; fluxuſ ſanguiniſ narium erit per criſiſ primas z tinitum z ſurditatem z tenſione ipoc in v̄trocq; latere ſeu dolorem z ſtricturam anbeli in natura pellit mām ad ſuperiora z infla? capiti or ante oculos z imaq; ſimiles flāmīſ z igniſ z rubedo oculorum z faciei mūritua narium

Rosa Anglica, 1506

Michael Angelo

The Siegman Archives at Thomas Jefferson University's Scott Library holds about 6,000 rare books on medicine. They date from the 1460s through the 19th century. One of them is Rosa Anglica (The English Rose) written by John of Gaddesden, an English physician (1280-1361). This influential work was printed in Latin in 1506 and is the first medical textbook by an English author. I have tinted the detail of this leaf a rose color to reflect the title.

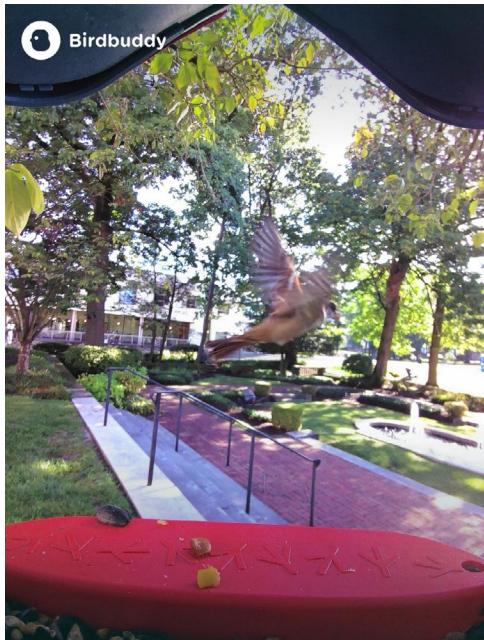


Northern Cardinal

Early Morning Northern Cardinal

Ian Andrefski

This image depicts a northern cardinal caught on camera as it eats its breakfast by the BirdBuddy AI system housed in various birdhouses across Jefferson East Falls campus. These cameras are being used by the Jefferson Department of Biology to analyze and identify bird species across campus throughout the year as part of a multi-year study of how AI can be used to give us a more intimate view of our environment.



House Sparrow in Flight

Ian Andrefski

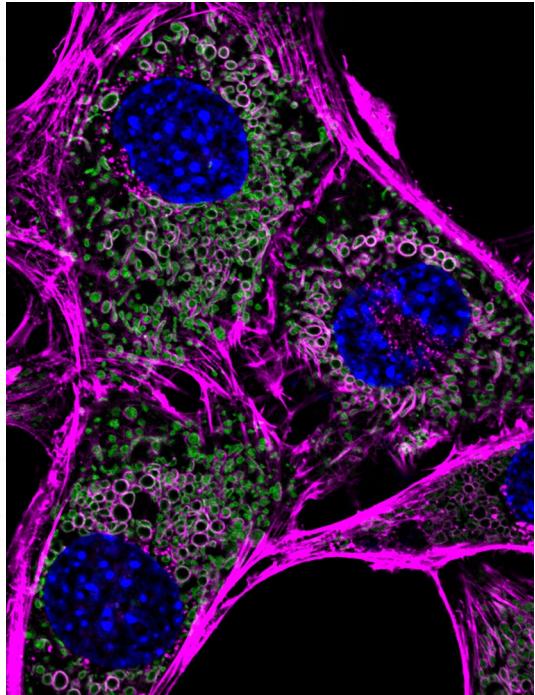
This is an image of a house sparrow mid-flight as it passes one of the many bird houses on Jefferson East Falls campus controlled by the BirdBuddy AI system. Researchers in Jefferson's Biology Department are using it to automatically capture photos of and identify the bird populations and species across campus over the year as part of a larger multi-year study which hopes to deduce the power of AI as a tool in the pursuit of observing the natural world in fleeting moments no human eye could catch.



The Loss of Horizons & the Golden Thread of Beauty

Ivano D'Angella

A napkin sketch capturing the essence of negative capability — a space I've wandered for years, questioning the origins of imagination and creativity. Inspired by John Keats' idea of embracing artistic beauty through uncertainty and intellectual ambiguity, this sketch resists the pull of objective reality, favoring instead the mystery and wonder that lie beyond clear answers.



The Protective Embrace

Amrapali Ghosh

The image shows actin meshwork formation along the perimeter of the "cellular powerhouse" or the mitochondria upon loss of its DNA content in mouse embryonic fibroblast cells. This actin network (in magenta, using a phalloidin marker) shields functionally compromised & unhealthy mitochondria (in green, using a Torn20 marker) from destruction through a mechanism called mitophagy, which disposes of cellular trash. This gives the mitochondria a chance to recover.



Illuminated Exotic Dye in a Neural Network of Fiber

Becky Flax (KDEC)

Dr. Anne Bower (CLS)

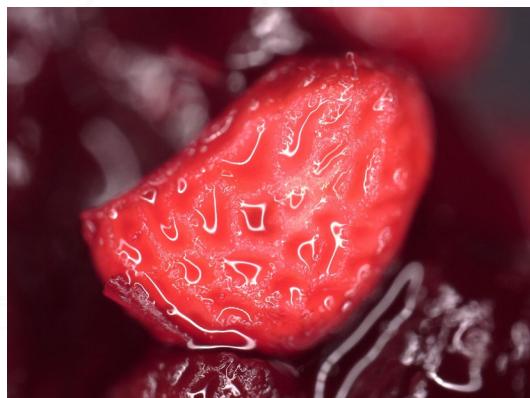
Becca Nyce (Senior, Biology)

Emma Myers (Junior, Biology)

This "Illuminated Exotic Dye in a Neural Network of Fiber" is a digital microscopic representation at 500x of organic cotton fibers in their raw, scoured & whitened, mordanted & dyed state.

The Victorian pastel pink is Wineberry (*Rubus phoenicolasmus*) and the golden wheat is Barberry (*Berberis thunbergii*). Our multidisciplinary research extracts dyes from invasive exotic plant species which are decimating the North American environment. Natural dyes hold unique commercial potential in the global textile industry.

Invasive management promotes native restoration through financial incentives.



Sumptuous Wineberry Coulis

Becky Flax (KDEC)

Dr. Anne Bower (CLS)

Becca Nyce (Senior, Biology)

Emma Myers (Junior, Biology)

This "Sumptuous Wineberry Coulis" is a single burgundy seed submerged in an acidic marinade. Wineberry (*Rubus phoenicolasmus*) is a noxious weed from Asia, which is destroying the biodiversity of half the habitat of the United States. Our interdisciplinary inquiry harvests the reproductive parts to test their commercial dye potential in organic cotton and wool fabrics in the textile industry. We hope to encourage eradication efforts that are economically viable and generate revenue to promote native restoration.

The Geist

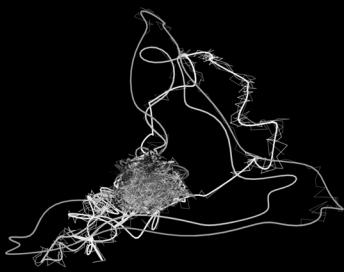
Tarik Hawkins

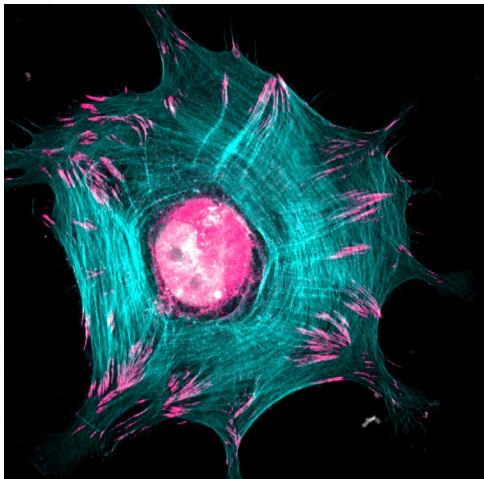
The Ghost Inside the Machine:
The Geist. The Geist is a three-dimensional representation of a human brain recording captured via standard, full length electroencephalogram (EEG). Borrowing mathematical techniques from advanced calculus to develop novel ways to analyze EEG, The Geist transforms the spontaneous electrical energy of a healthy human brain into an apparition. In this divorce from the clinical, two-dimensional images of brain activity produced at the medical beds of a hospital, The Geist is a reminder that we are all ghosts inhabiting the apparatus of our own bodies. This participant denied living with any neurological or psychiatric illness.



The Geist, Reprised

Tarik Hawkins

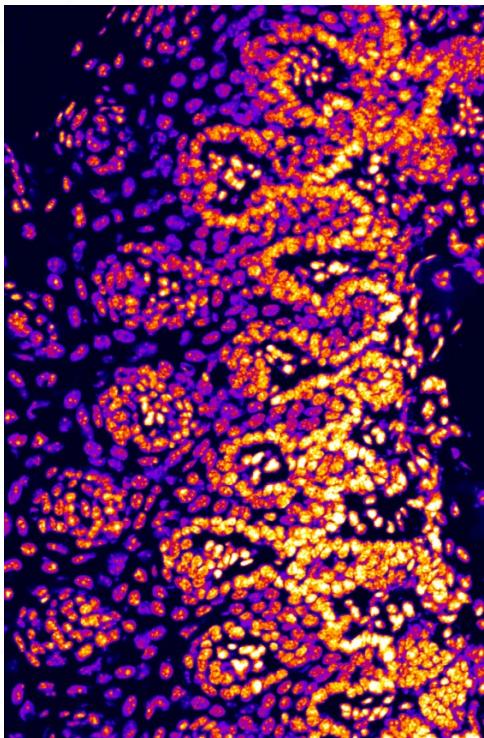




Attachment Issues

Elham Javed

This image captures a human airway smooth muscle cell just one hour after plating — already beginning to anchor and define its shape. The cyan filaments reveal actin, a key structural protein forming the cell's internal scaffold. The pink clusters mark vinculin, a vital attachment protein that helps the cell grip its surrounding matrix. Together, these tiny components choreograph the cell's balance, tension and connection — allowing it to find its place within the intricate landscape of the lung. A striking reminder that even at the microscopic level, organization is beauty.



WINNER

LIFE UNDER THE
MICROSCOPE

Taste Buds on Fire

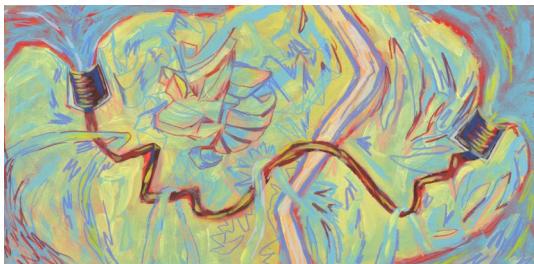
Elham Javed

This image reveals the intricate world of mouse taste buds, glowing fiery hues that capture the energy of sensation itself. The tongue tissue was stained with DAPI, a nuclear dye used to identify each cluster of taste bud cells — gateways where chemicals from food ignite electrical signals that travel to the brain to create the perception of taste. The depth of the tissue is color-coded in the hues of fire, adding dimension to the image. Beneath the microscope, what appears as flames is, in fact, the beauty of biology — where flavor begins and the science of sensation comes to life.

Bidirectional Cross-Talk

Anjali Karustis

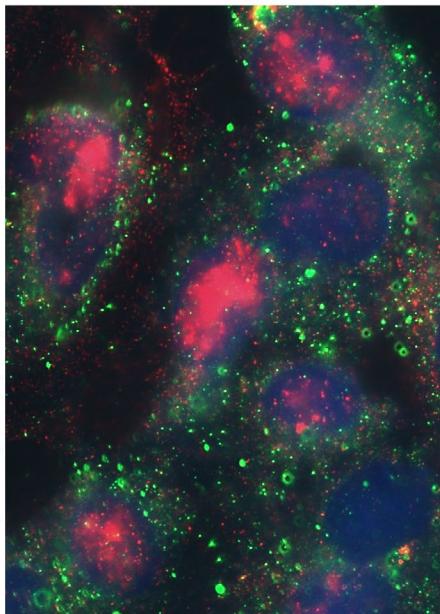
"Bidirectional Cross-Talk" (10" x 20", acrylic and pastel) illustrates the active communication between the brain and the gut. Depicting tin can phones symbolize constant two-way dialogue, with flowing colors and organic shapes evoking gut microbiota and neurotransmitters. This connection, often called the gut-brain axis, plays a key role in influencing mood, cognition and digestion. The blending of colors and forms suggests how signals from the gut can affect the brain and vice versa, emphasizing the complexity and significance of this relationship in mental and gastrointestinal health.



Chronic Stress Quilt

Anjali Karustis

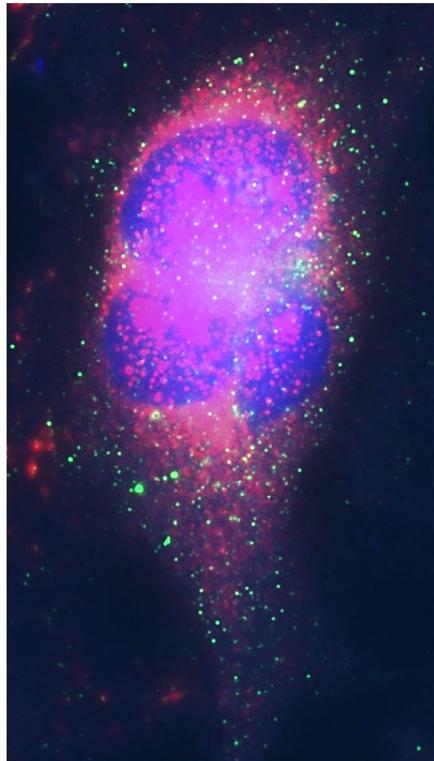
This quilted wall hanging (18" x 19") explores the lasting impact of prolonged stress on the body and mind. Each stitch symbolizes cumulative stress, and those viewing are prompted to imagine unpicking the stitches of the entire quilt, leaving only tiny holes where thread once was holding it together. While the holes can be healed, the impact of stress remains. As a future counselor, I hope to support the repair process, helping shrink these roles and restore resilience.



Constellations of Inflammation in Vascular Galaxy

Mandeep Kaur

What looks like a galaxy of stars is a microscopic view of human lung endothelial cells (blue). These glowing points of ICAM-1 (green) and VCAM-1 (pink) are the warriors that guide immune cells to the sites of injury or inflammation. This cosmic pattern isn't in space, but rather in the body's inner landscape, which responds with precision and purpose. Each bright signal is a call for help, forming a universe where healing begins. It is a reminder that patterns, structure and purpose govern microscopic and macroscopic worlds.



A Floral Burst of Inflammation

Mandeep Kaur

Like a flower blooming at dawn, this lung endothelial cell "blooms" in response to danger. What begins as beauty is the first whisper of inflammation, showing a delicate balance between healing and harm. These glowing petals mark (ICAM-1 in green and VCAM-1 in red, which blend into magenta) and guide immune cells to the site of inflammation. Even at the microscopic level, our cells speak in the language of color and motion.



Flat V's and Curled Edges

Meghan Kelly

This piece is painted from direct observation of a knitted swatch. In my knitting courses, we learn our techniques and practice by knitting rectangular swatches. We then measure the dimensions and stitch gauge, allowing for further iterations after initial data is gathered. These swatches serve as tools for aesthetic development, leading to more refined designs as the concept is developed alongside the necessary technical skills. While each swatch has no further usage beyond its manifest existence, it is worth a great deal to the learner and can be quite beautiful in its own right.

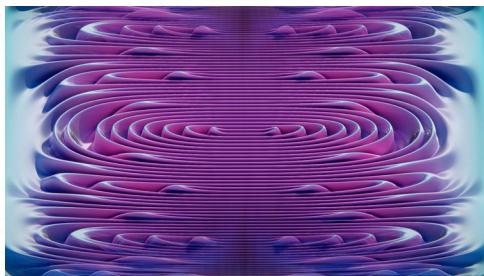


Tweedy Observations

Meghan Kelly

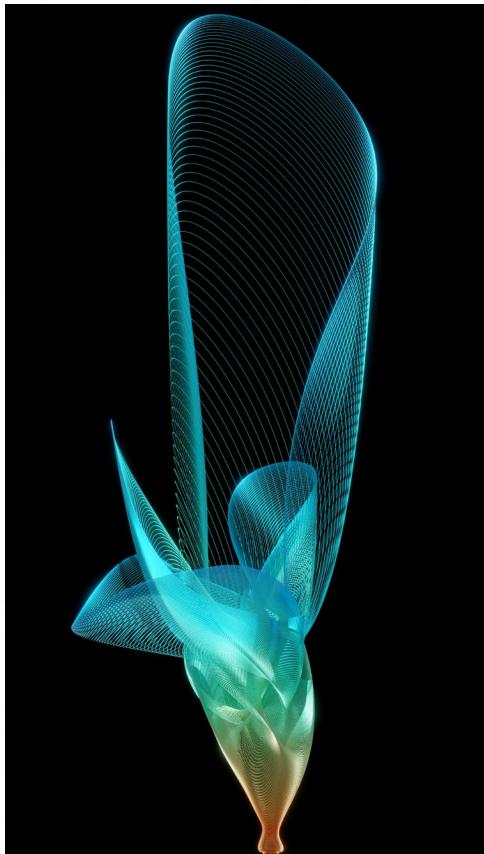
Bifurcation Blanket

Adam Lewis



This alien surface is formed completely with a simple equation that defines the parabola: $y=rx(1-x)$, a chaotic system.

Chaos emerges when the equation is iterated on itself, and the value of r is changed over time from 2 to 4. The peaceful, blue regions to either side occur when r is closest to 2; the center when r equals 4. Peaks and valleys are created at bifurcation points: values of r where the system cascades closer to chaos. This visualization, made in Blender, explores the application of mathematical concepts to traditional 3D rendering pipelines to produce abstract art pieces.



Chaos Flower

Adam Lewis

This tall, flower-like form is generated from a set of differential equations known as the Rössler attractor.

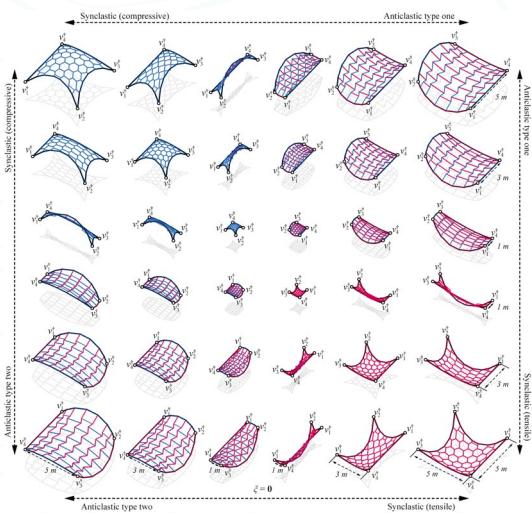
The system is iteratively applied to a circular curve with a radius of 1, as the value of 'a' (an independent variable of the system) changes from 0 to 0.386. With each increase, the curve is duplicated and shifted upward to create unique forms. This simulation can be viewed in real-time as it grows into its final shape. The result is shaded according to each curve's length, from a vibrant orange on the shortest rings to a bright blue on the longest.

Notra: A Kerf–Bent Polyhedral Timber Frame

Yao Lu



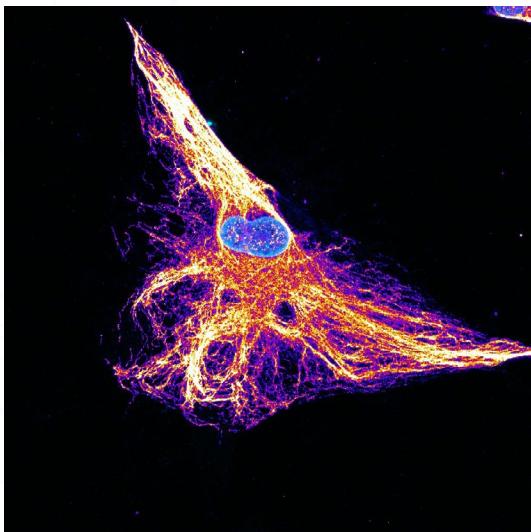
Notra is a kerf-bent timber frame coffee table that serves as a small-scale prototype for a novel space frame system. It explores an integrated design and fabrication approach that blurs the boundary between nodes and bars in timber space frame structures. The system features curved nodal geometries fabricated from planar timber sheets using three-axis Computer Numerical Control (CNC) milling, eliminating the need for molds or custom components typically required for complex joints. Precisely calculated kerf cuts allow the elements to bend to their intended curvature without auxiliary tools. This approach reduces material waste, simplifies fabrication and enhances accessibility for constructing intricate frames.



Surfaces in Balance

Yao Lu

This image reveals how flat sheets can transform into flowing architectural surfaces. Each row and column shows a different way that forces — compression or tension — shape the same simple framework into domes, arches or saddles. The blue patterns represent structures held by compression, while the pink ones are stabilized by tension. Together, they form a matrix of possibilities, from basket-like shells to fabric-like membranes. What looks like an artistic quilt is actually a scientific map of structural equilibrium. It shows how geometry and force work together to make light yet stable forms for structures.



The Cell Sorting Hat

Megan Muench

Meet the Cell Sorting Hat! This glowing image shows the Wizarding World of a human stem cell lit up to reveal vimentin – an inner scaffolding protein (in yellow and orange) that helps the cell stay strong, move and adapt. Like Hogwarts' Sorting Hat, vimentin "reads" the cell's needs and helps guide its fate – whether it's becoming a neuron or responding to stress. Whether the cell needs Gryffindor's bravery to face stress, Ravenclaw's wisdom to reorganize, Hufflepuff's loyalty to stay intact, or Slytherin's ambition to transform, vimentin helps it choose the right path and stay strong through the journey.



A Heartworm's Tail

Mohini Nakhale

Characteristic curly tail of a sexually mature adult male *Dirofilaria immitis* heartworm recovered from a mouse heart. These roundworm parasites are primarily found in dogs and are the causative agent of canine heartworm disease, posing significant veterinary and economic concerns worldwide. Understanding how worms develop in the hearts of mice relative to dogs is pivotal to advancing the future of diagnostics and therapeutics. The male worm was collected at 163 days post-infection and measures 13.8 cm long. Images taken using differential interference contrast microscopy use polarized light to create a 3D image of the unstained worm.



Thrive

Dusty Princl

"Thrive" explores sustainability through the symbolic presence of bees within a still life composition. Bees, vital pollinators in our ecosystem, represent the delicate balance between human activity and environmental health. By incorporating them into this textile piece, the work underscores the urgency of preserving biodiversity — a core principle of sustainable practice. Just as sustainable print design requires mindful material use and ethical production, bees reflect nature's own system of renewal and interdependence. "Thrive" is both a celebration of life and a call to protect the fragile systems that support it, bridging art, ecology and responsible design in this visual narrative.



Flourish

Dusty Princl

"Flourish" is a celebration of meadow biodiversity, captured through scattered flowers and insects. This textile piece highlights the interconnectedness of species within natural ecosystems, emphasizing how even the smallest organisms play essential roles in maintaining ecological balance. By drawing attention to the beauty and complexity of meadows, "Flourish" aligns with sustainable design principles — reminding us that true sustainability embraces and protects diversity. Through its detailed representation of flora and fauna, the work invites reflection on the importance of preserving habitats that allow nature not only to survive, but to thrive and flourish.

Mosaic Voices Reimagining OT

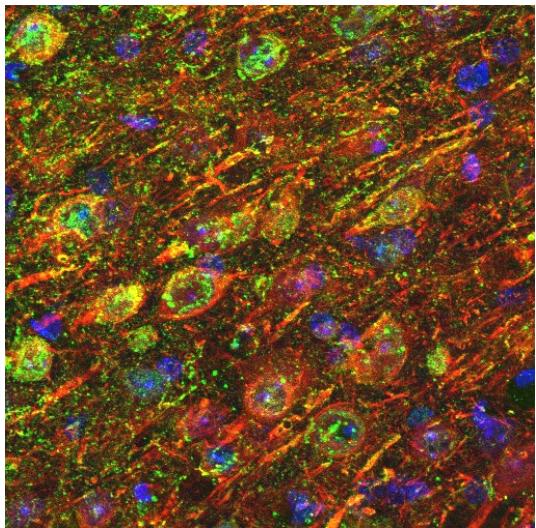
Nandita Singh

This mosaic reimagines the vibrant cultural and linguistic wealth within occupational therapy (OT) fieldwork education. Each glass tile symbolizes the unique contributions of students, fieldwork educators and community partners, reflecting their diverse backgrounds and strengths. Inspired by Community Cultural Wealth's six forms — aspirational, linguistic, familial, social, navigational and resistant capital — the interconnected design embodies collaboration and shared learning. Just as mosaics turn fragmented pieces into unified art, this piece envisions fieldwork education as a harmonious process where diversity builds stronger, more inclusive frameworks for mutual learning and professional growth. It celebrates how cultural strengths enrich OT education and inspire meaningful connections for learners and educators alike.



Mosaic Voices: Sunflower

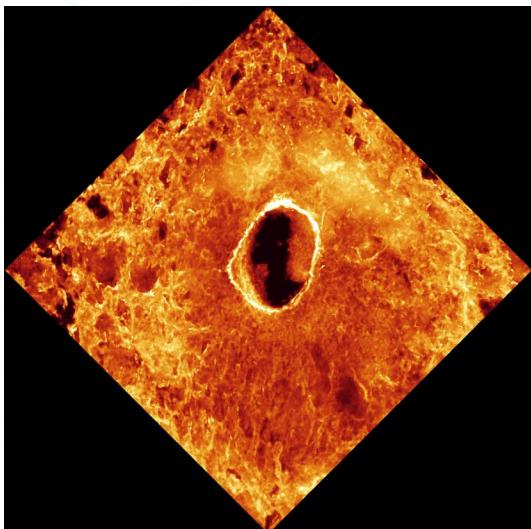
Nandita Singh



Brain on FIRE

Gabrielle Spagnuolo

This fluorescent image shows a brain section from a FIRE mouse, a transgenic model engineered to lack microglia — the brain's resident immune cells. Neurons glow in red, weaving a complex network, while the high expression of a green-labeled protein reveals altered, vulnerable areas where cellular communication is disrupted. Without microglia's watchful presence, this exposed neural landscape quietly tells a story of fragility and loss, highlighting the vital role these unseen caretakers play in keeping the brain healthy.



The Eye of Sauron (In a Blood Clot)

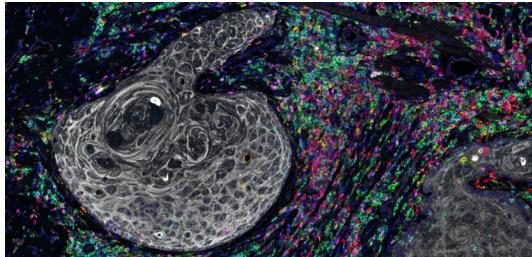
Jenna Severa

Blood clotting is important to stop bleeding after injury to a blood vessel. "The Eye of Sauron (In a Blood Clot)" depicts how failed clotting leads to an open space through which blood can pass. It can resemble the flaming eye seen in the popular Lord of the Rings movie. Understanding why blood clotting does not happen when it should provides information on how to better treat bleeding disorders and manage bleeding risks in patients on blood thinners.

Eye of a Tornado

Yunguang Sun

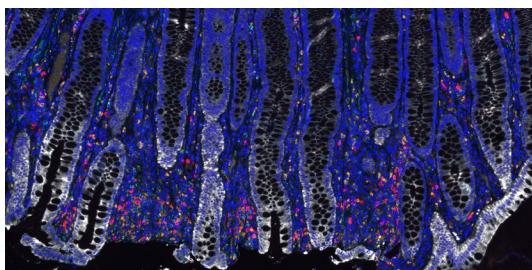
Under multiplex immunofluorescence, the tumor microenvironment unfolds like a tornado caught in tissue: The pan-CK⁺ (white) tumor islands swirl inward like storm bands, encircled by rings of CD4⁺ (green), CD8⁺ (cyan) and FOXP3⁺ (magenta) T-cells and CD20⁺ B cells (red), as well as macrophages (CD68⁺, orange) immune cells. The central “eye” appears relatively clear of immune infiltration, while the periphery glows with a turbulent mix of lymphocytes and macrophages. This “tornado-eye” configuration vividly captures the spatial choreography between tumor epithelial structures and the immune microenvironment in head and neck cancer.

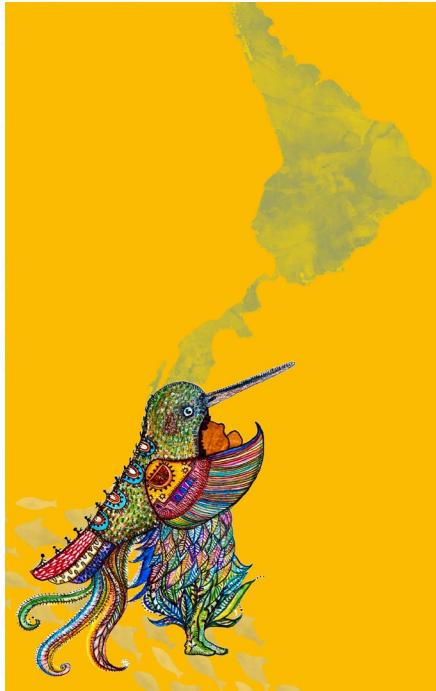


Stalactite in the Colon

Yunguang Sun

In multiplex immunofluorescence, the colon cancer microenvironment appears like a cave of glowing stalactites — the epithelial glands (pan-CK⁺, white) descend like crystalline columns, while immune cells cascade beneath them in structured layers. CD8⁺ (cyan) T cells cling to the epithelial edges like mineral deposits, CD4⁺ (green) and FOXP3⁺ (yellow) cells accumulate below them, and macrophages (orange) and B cells (red) fill the deeper stromal “floor.” This “stalactite” formation reflects the directional infiltration of immune cells into glandular structures, illustrating a vertical immune gradient along the tumor–stroma axis in colon cancer.





Knowledge in Flight

Pamela Talero Cabrejo

This artwork, the cover of Learning from Occupational Therapy in Latin America, shows a hummingbird shaped like a person carrying small figures across its back. The image also includes an inverted map of Latin America, inspired by artist Joaquín Torres-García, to reorient how we see the world. Together, the hummingbird and map symbolize resilience, collective journeys and new perspectives in research. They highlight how socioecological factors shape daily life, and how knowledge grows stronger when democratized — shared across cultures and carried forward by many voices working together for justice, equity and inclusion.



WINNER
CONCEPTUAL ART

Without Borders

Pamela Talero Cabrejo

This artwork, created for the cover of Occupational Therapy Without Borders, configures the world map without borders, dissolving it into a vibrant background of people, animals and landscapes. The continents become inseparable from the living mosaic of creatures, symbolizing how human and ecological life are intertwined. Figures move together in rhythm, representing the shared struggles and hopes that connect humankind.

The composition reflects both beauty and defiance — communities orchestrating resilience while interrogating injustice. From a research perspective, the image shows how occupational therapy engages with diversity, equity and belonging, where knowledge emerges through collective action, creativity and interconnected perspectives.

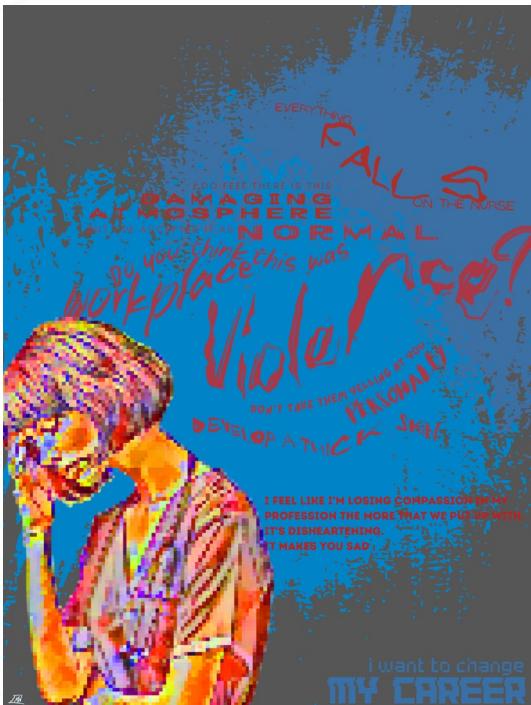
Voices: Listeners in the Noise. A Quilt of Autistic Lived Experiences

Loukia Tsafoulia

Color-coded quotes form a quilt of autistic lived experiences in a visual from the documentary Voices: Listeners in the Noise, now exhibited in Milan alongside the installation Echoes.

Traveling interviews were conducted across Philadelphia and online with participants from Ireland, Canada and the U.S. West Coast.

The analysis and coding of the interview transcripts inform design guidelines and urban planning strategies. The film explores autism as a catalyst for urban sound perception, revealing how city soundscapes impact autistic individuals. Through first-person narratives, Voices advocates for a neurodiverse urban future — one that embraces sensory plurality and inclusive design.

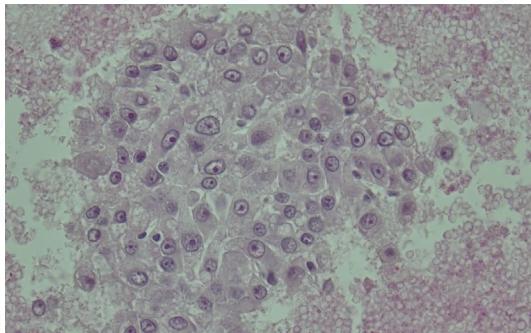


The Burden

Molly Waldeck

The Burden confronts workplace violence in nursing, using color theory to reveal both complexity and the impact of perception.

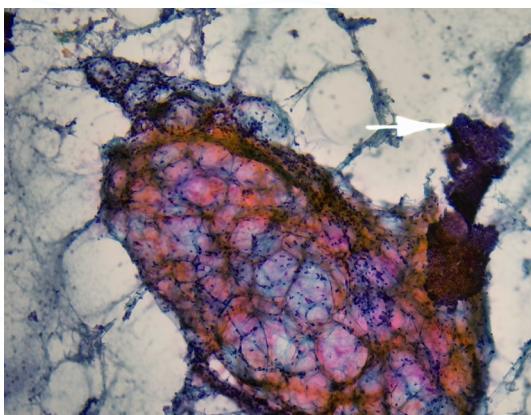
In full color, the nurse appears fragmented, her true expression suppressed beneath stress and research quotes that cloud her psyche. Reds suggest anger and violence, while blues cast sorrow and despair; one heavy quote sinks to the page's edge. Viewed in black and white, the image flattens into simplicity, reflecting the generalized perception of the nurse. Through this shift, the image underscores how perspective alters understanding, exposing the hidden toll of workplace violence and the uneasy realities nurses endure.



Malignant Eyes

Rosemary Westphal

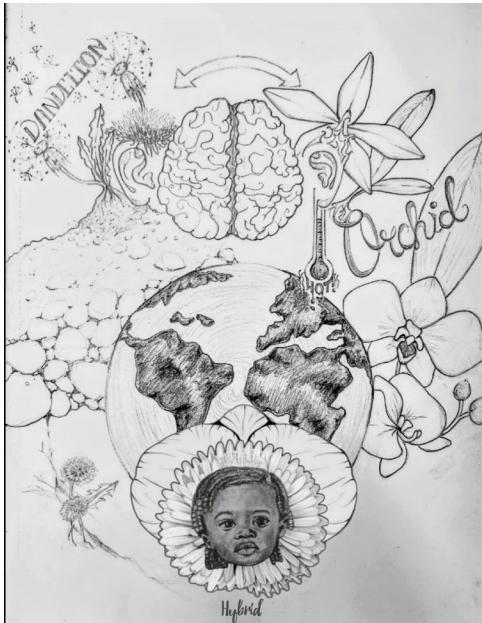
A histologic tissue section of hepatocellular carcinoma (liver cancer). Beneath the lens, hepatocellular carcinoma reveals itself to be a restless sea of watchful eyes. Each nucleus and nucleoli tells a story of disorder and malignancy, where the quiet rhythm of the healthy liver is replaced by a haunting, chaotic beauty.



Stained Glass Adipose

Rosemary Westphal

A field of view showing a fibroadenoma or benign lump of the breast. The multicolored bubbles are areas of adipose/fat cells that have proliferated. Each space holds the story of stored energy. Under magnification, science transforms into a landscape of color and form, blurring the line between biology and art.



Dandelion-Orchid Hybrid

Sonya Williamson

This image, inspired by pediatrician Dr. Thomas Boyce's research, illustrates the concept of "dandelion" and "orchid" children in terms of responsivity and susceptibility to one's environment. Moreover, it explores the concept of combining ideas of inherent resilience and environmental influence – highlighting the importance of adopting a more holistic approach in counseling.



The Imprint of PTSD: Distorted Sense of Self

Sonya Williamson

This image illustrates how post-traumatic stress disorder (PTSD) can leave an imprint on one's sense of self. Furthermore, it shows how cognitive and somatic disruptions accompany the aftermath of trauma – highlighting the importance of rerouting neural patterns of thinking to change the way one processes thoughts, feelings and memories connected to traumatic events.



Gift of Life

Uzung Yoon

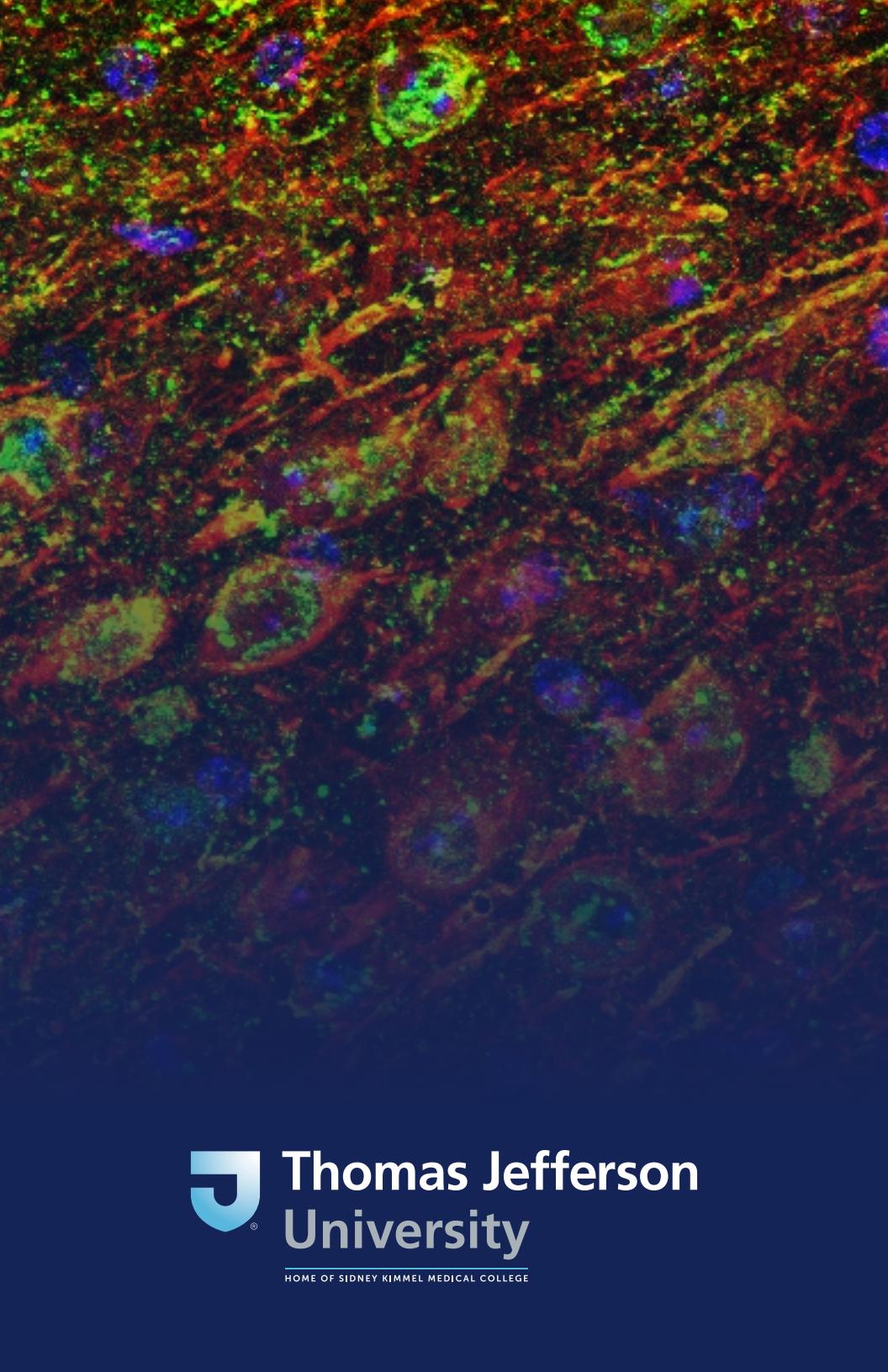
This artwork reimagines the liver as a vibrant symbol of renewal and connection. Fluorescent colors pulse with the energy of life, reflecting the harmony between science and compassion in transplantation. The flowing form and splattered patterns represent regeneration, uncertainty and the invisible bond between donor and recipient. Each color embodies vitality, hope and gratitude — celebrating the human capacity to give life. "Gift of Life" invites viewers to see liver transplantation not just as a surgical triumph, but as a luminous expression of resilience, generosity and the shared rhythm that sustains humanity.



Surrounded by Noise: The Human Within the Data

Mohamed Yousuf

This 3D point cloud captures a patient during imaging, revealing both the precision and imperfection of modern data collection. The scattered points surrounding the body represent sensor noise — unwanted data that researchers strive to remove — yet here, they take on an almost ethereal quality. Like layers of interference around the human experience, these distortions remind us of the obstacles researchers face in pursuit of clarity. Our work seeks to refine these digital reconstructions for clinical use, transforming chaos into insight — and, perhaps, finding beauty in the process.



**Thomas Jefferson
University**

HOME OF SIDNEY KIMMEL MEDICAL COLLEGE