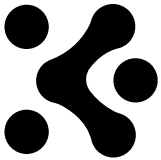
# **Playing** with **flow**

Immersive Musical Platforms,
the **Heath Interactive** Way



*“Flow is being completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one... Your whole being is involved, and you’re using your skills to the utmost.”*

Csíkszentmihályi, Mihály. Flow: The Psychology of Optimal Experience. Harper & Row, 1990.

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# Foundations

*"We cannot understand the origin and nature of Homo sapiens without addressing why and how we are a musical species."*

Mithen, Steven. "Overview: The Singing Neanderthals: The Origins of Music, Language, Mind, and Body." Cambridge Archaeological Journal, vol. 16, no. 1, 2006, pp. 98-100.

We believe that musical creativity is fundamental to our humanity, yet direct and meaningful access to it is often out of reach for many.

At Heath Interactive, we use technology to expand inclusion and create more universally accessible experiences, guided by a set of ongoing inquiries:

How can non-traditional interfaces and novel feedback systems open new pathways into musical creativity, and empower real-time engagement for all?

What if the known benefits of embodied music-making could be extended to reach populations that have not traditionally been able to participate?

How might these types of interventions be maximized in therapeutic and rehabilitative environments?

How can experiential platforms be designed to foster more universal inclusion across both public and private spaces?

## Universal Design

*"Accessibility is a compensatory strategy conceived to prevent discrimination while universal design seeks to change the consciousness of those who create the built environment to address a broader conception of the human body."*

Steinfeld, Edward. "The Space of Accessibility and Universal Design." Rethinking Disability and Human Rights, edited volume, Routledge, 2023, p. 19.

Blending fine art sculpture, cutting-edge fabrication, and custom sensor and audio systems, our work is equally at home defining and reimagining the most dynamic spaces in the world.

## Guided by the principles of universal design, we believe all populations deserve the highest standard of quality in design and craft.

Heath Interactive integrates a team of creative technologists; composers; sound designers; software and hardware developers; curators; architects; engineers; inventors; and artists—dreamers who harness the power of musical experience to shape installations, devices, and interactions.

Together, we create dynamic cultural artifacts that both resonate with and challenge the human mind and body.

Customized systems with dynamic musical mappings transform the built environment into universally accessible platforms for visceral musical engagement.

*"Interfaces are not simply objects or boundary points. They are autonomous zones of activity. Interfaces are not things, but rather processes that effect a result of whatever kind." -*

Galloway, Alexander R. The Interface Effect. Cambridge, UK: Polity Press, 2012, p. vii.

At Heath Interactive we often think of interactive systems and their interface designs as archetypal in-between realms: portals through which alchemical processes of transformation, transmutation, transmigration, are simultaneously activated.

Artfully designed, these in-between spaces can create opportunities for self-discovery, new social experiences, and even transcendence.

# zones of activity

This approach to interfaces recognizes that they establish a presence with their own identity. Interwoven with a user's ability to make choices, receive feedback, and navigate modes, the interface also creates its own environment—a filter on otherwise limitless possibilities. The idea of system autonomy reminds us how strongly our methodologies shape and drive us.

We are inextricably involved in the mechanisms that empower us to make choices, and that enable us to exert our own autonomy as creative beings. The interactive decisions we make begin to develop a certain set of possibilities that ultimately become part of how we feel—through the interactions we have in these autonomous zones of activity. We all bring our own autonomy, our own creative agency; and in that zone of activity, we create something highly specialized—something that belongs to that moment, in that space—and which becomes embodied through our own unique minds and bodies.

# Immersive platforms as living ecosystems

## for embodied experiences and visceral engagements

Custom systems evolve with their environment—and in response to myriad, unexpected human interactions. Users are empowered to select their preferred mappings and sound libraries in real-time, tailoring experiences that can drive the most meaningful and personal engagements.

We work with museums, hospitals, brands, artists, architects, communities, clinicians, and other visionaries—opening broader access to the powerful benefits of rich, sustained musical immersion.

# Selected Projects

# Case Studies

**What if a building could be a musical instrument?**

# Coalescent moments

Commissioned by the Barbara and Art Culver Center of the Arts in downtown Riverside, CA.

Gaming controllers, live video, and custom music software, all transform the Culver Center of the Arts into a public musical instrument and intergenerational celebration of movement.

Participants intuitively control live video, beats, loops, harmonies and melodies.

The building becomes an interface through which the community reimagines how they can interact with each other to create their own dynamic soundtrack, and improvised choreography.

**A curated event and concert, commissioned by the Culver Center of the Arts**

# Electronics Live!

## Sound art installation, live performance, and media fair

"Electronics Live!" converts the atrium floor of the Culver Center into an interactive media festival - combining elements of traditional performance and audience-guided improvisation, engaging and educating the public with hands-on musical experiences.

Electronics Live! presents multi-disciplinary approaches to word, image, light, movement, sound, and space; and culminates in a major public performance of new site-specific pieces for viola and new media technologies.


CENTER OF THE ARTS
3834

# Brass sky

An installation with resonating brass cymbals as sound sources

Suspended cymbals prepared with audio transducers resonate with sounds of bowed metals, rain drops, and ambient string instruments.

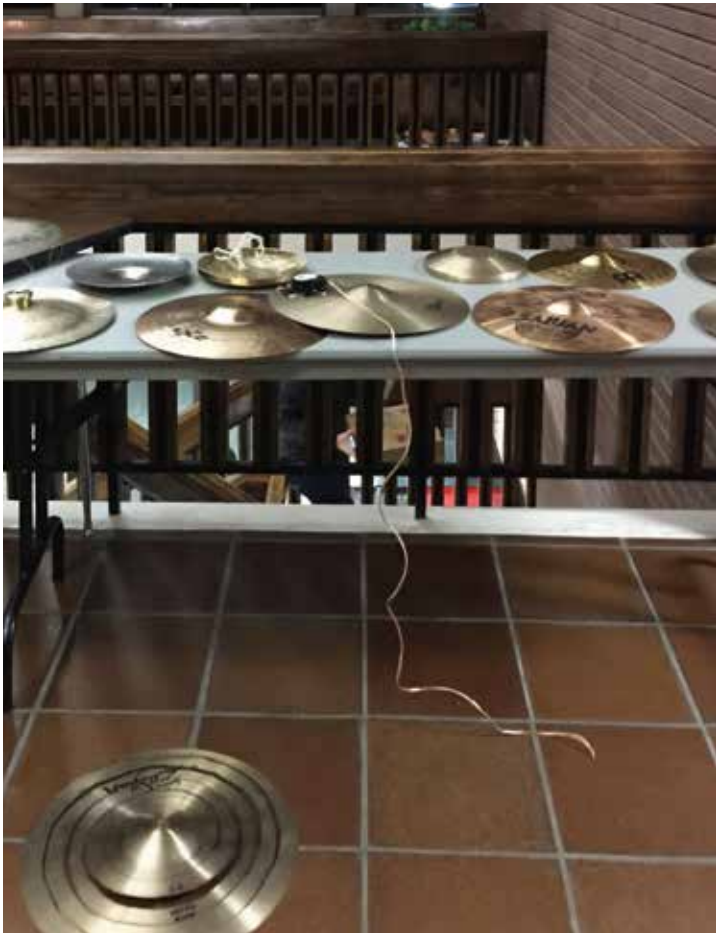
Commissioned by percussionist Lynn Vartan and Southern Utah University Music Department

When we use traditional speakers to reproduce music or any other sound sources, we're seeking to reproduce those sounds with fidelity to the original source.

When we install transducers onto alternative materials, like wood, glass, or in this case, brass, we are essentially converting that chosen material into a new kind of speaker.

The source materials then take on some of the resonant properties (and related sound colors) of that material, including their tendency to suppress certain frequencies and exaggerate others. Brass, once excited by sound, continues to resonate: you can see it move, feel it vibrate, and hear it shimmer metallically.

Brass Sky uses multiple channels of spatialized audio sources to create colored sounds that move throughout the environment and swirl above visitors' heads.




EXIT

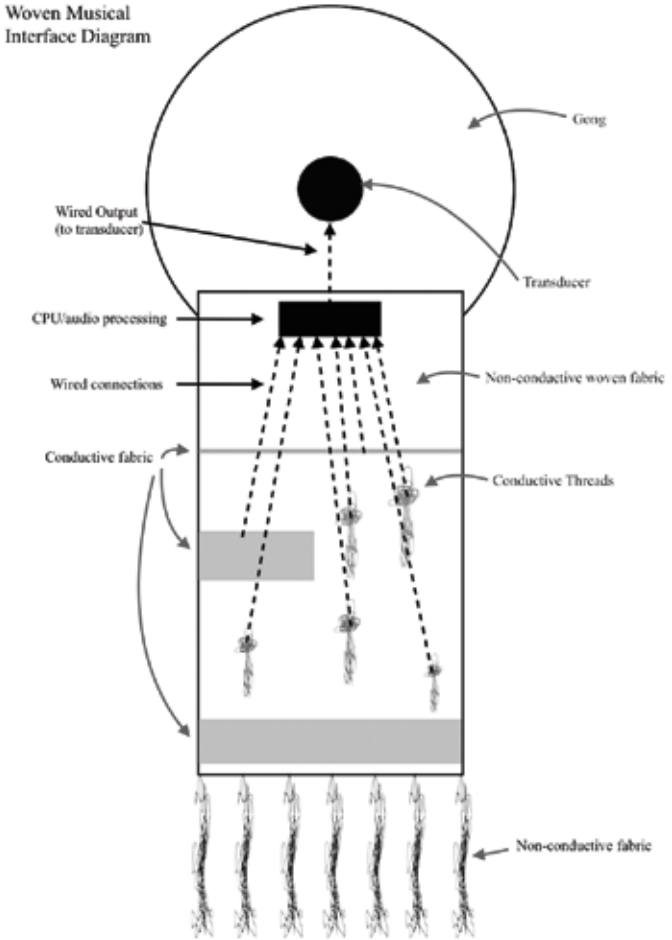
# Loom-woven sound sculptures and musical interfaces, with textile artist Rhiannon Griego

# Sonic textiles

Celebrating ancient techniques and iconic materials through pattern, touch, and sound

# Gongs, prepared with audio transducers, are suspended alongside custom loom-woven fabrics.

Embedded conductive threads, patches, and tassels function as touch sensors to transform the sculptures into playable instruments that invite creatively curated sonic possibilities and evolving musical mappings.



# Feel the loom-woven textiles and hear the suspended gongs resonate to your touch.

Hidden sensors, software, and audio transducers, transform contact into sound and vibration. Hand-crafted artistry and the timeless voices of metal gongs envelop you.

Rhiannon Griego weaves conductive threads into a new textile-based musical interface.

Technology should empower engagement, not define it.

New interfaces can be soft to the touch, and musical sounds can come from a variety of materials.

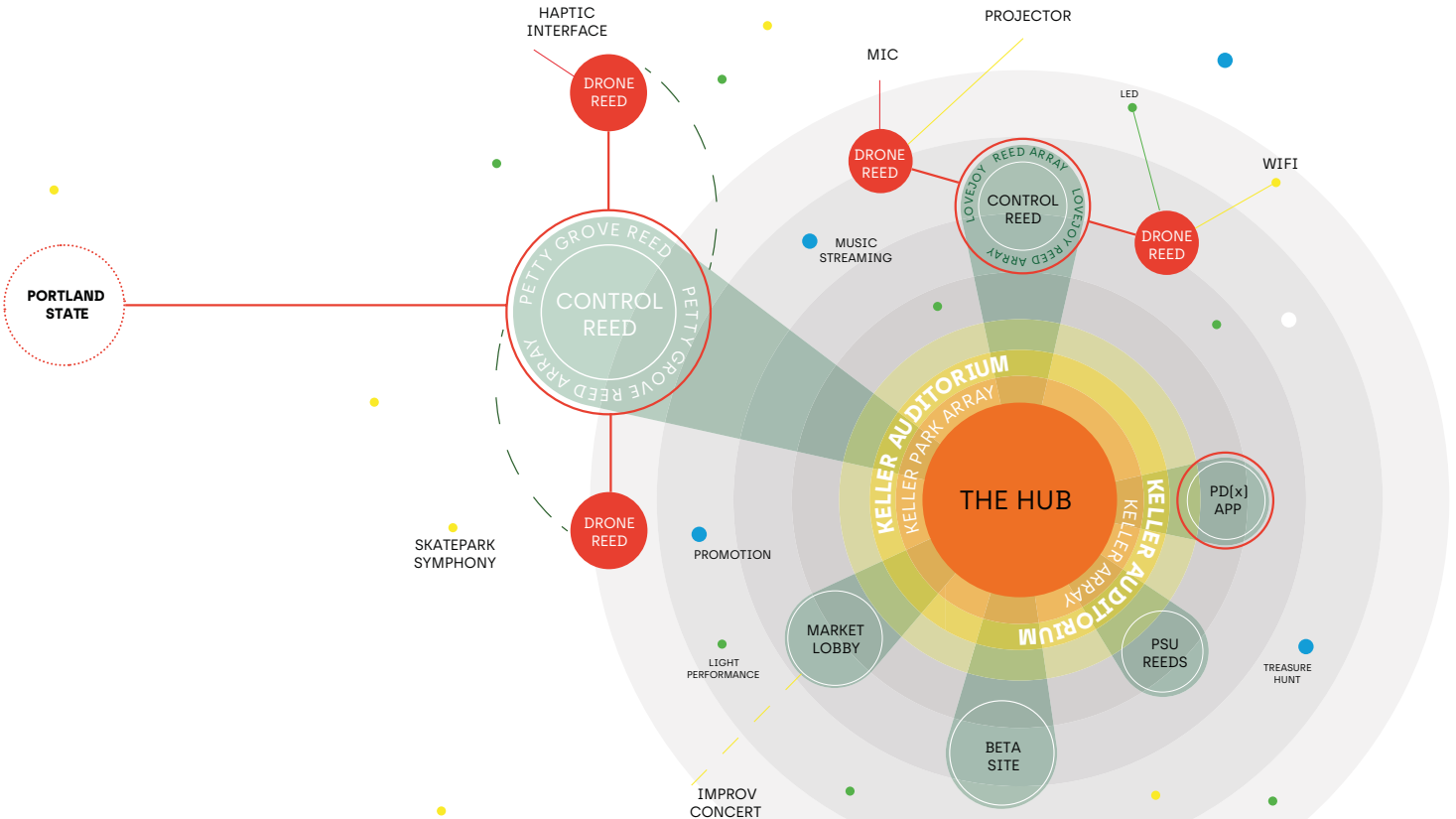
We design for enchantment, where the most lasting memories emerge in moments that are unexpected, elusive, and often unlikely.

*"Griego's designs feature natural, durable materials such as wool, organic cotton, silk, linen, hemp, bamboo, and even some uncommon fibers such as agave, yucca and horsehair. That materiality reflects not only the time-honored traditions of her mixed-race heritage —her Tohono O'odham ancestors used agave and horsehair in their basketweaving, while her Spanish forebears raised churro sheep — but also the feeling she aims to capture for the wearer."*

Nelson, Kate. "This Artist Is Weaving Her Indigenous Ancestry into Meaningful Wearable Artwork." HuffPost, 9 July 2024.

**What if you could play the city like an instrument?**

# Enchanted reeds

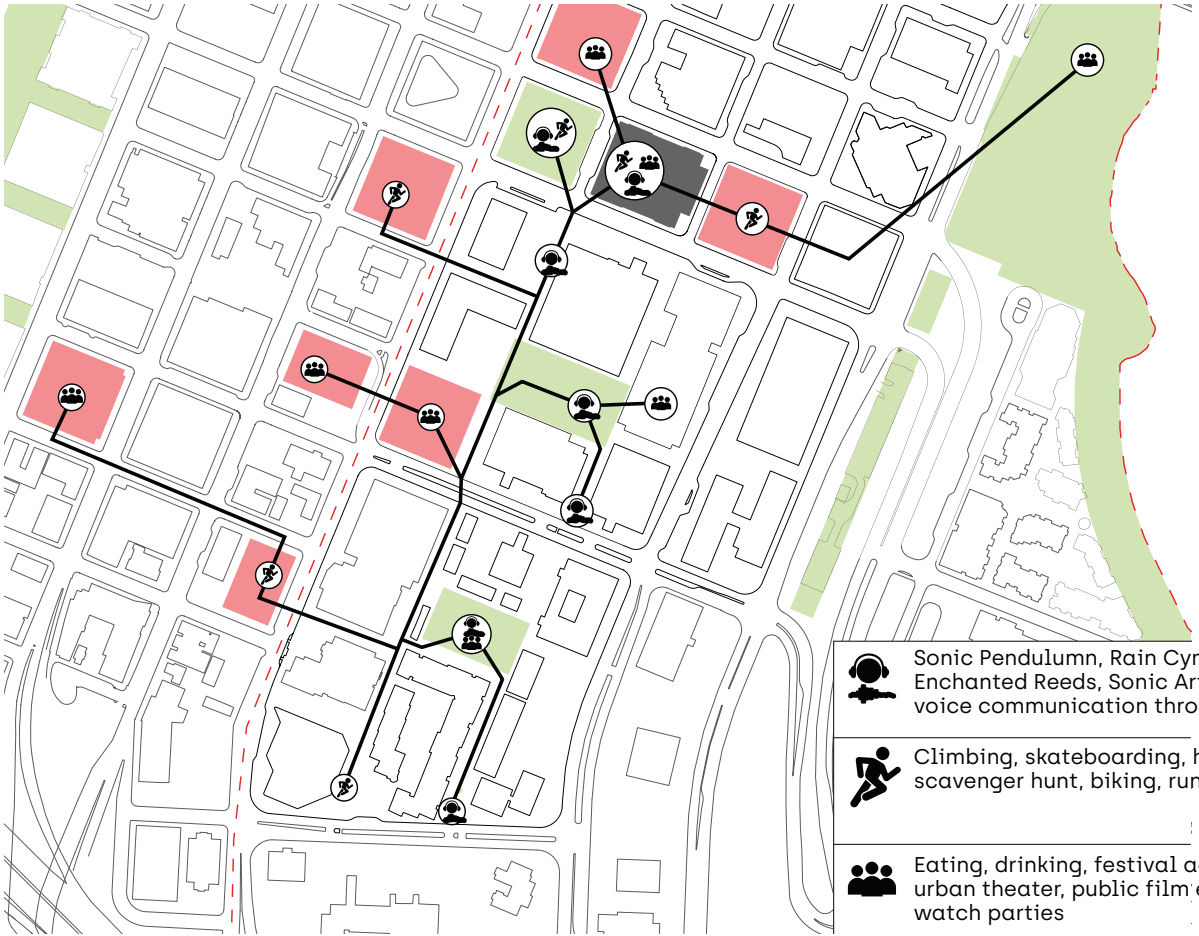



Finalists, City of Portland Design Competition

The reeds form a networked system of interactive musical and multimedia interfaces, embedded with sensors and accessible to the community as immersive urban infrastructure.

In collaboration with RoTo Architects and Alex McDowell's Experimental, we formed a design cohort to reimagine Portland's Keller District as an Affinity Space centered around creativity, innovation, and learning—predicated on the belief that culture creates community.

Each reed functions as both a stand-alone interface and as part of a larger grove, where multiple reeds coordinate to move sound fluidly through space, immersing visitors in the environment. They can also operate like traditional speakers, extending into DJ sets or live performances that require sound reinforcement. With integrated projectors, they can display graphical interfaces, imagery, video, stories, or instructions for gamified experiences. Orchestrated together, they become tools for storytelling, guiding participants through musical journeys, illuminating histories of place, or enriching the atmosphere with seasonal cycles, celebrations, and even responses to rain and other environmental patterns.


Sonic Pendulumn, Rain Cymbals, Sonic Forest, Enchanted Reeds, Sonic Artifact Geocache, voice communication through installations
Climbing, skateboarding, hiking, walking, scavenger hunt, biking, running, Yoga
Eating, drinking, festival activities, markets, urban theater, public film events, remote watch parties

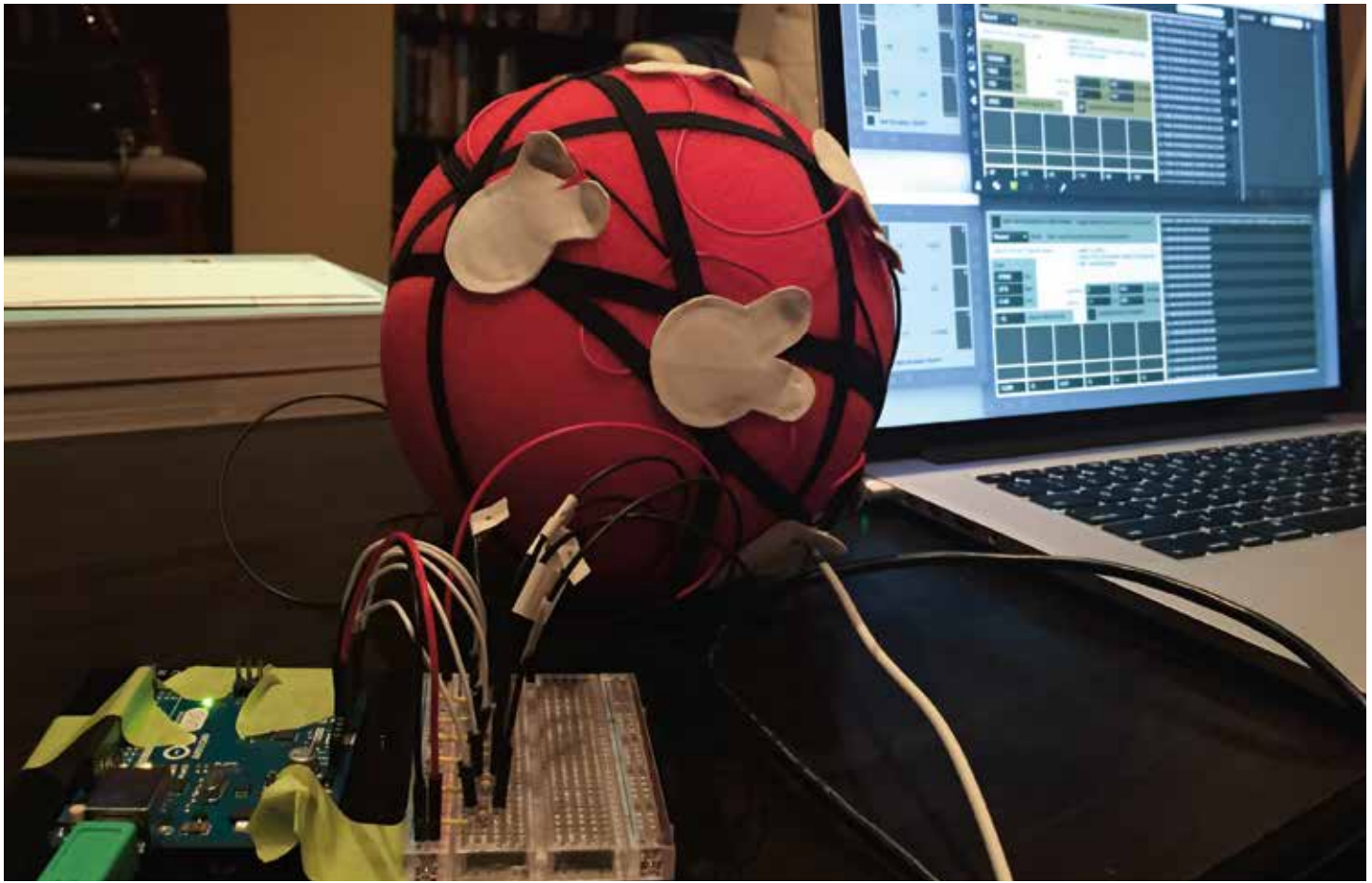
**Patented wireless musical interface: US10775941B2, US11298551B2**


iOSphere

The iOSphere is a soft, spherical, wireless control interface designed for therapeutic and gamified musical experiences.

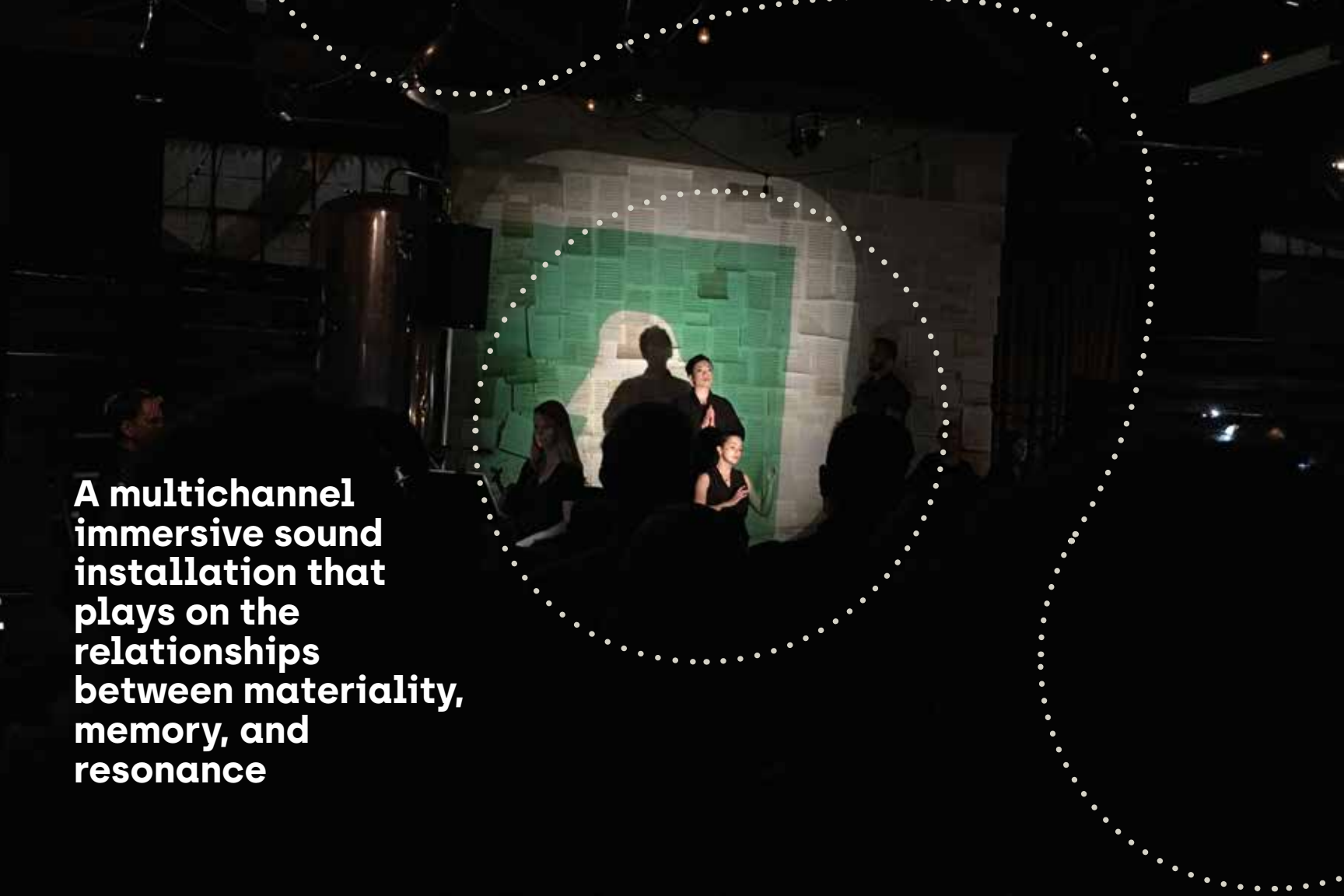
With virtually limitless possible software mappings, it adapts to a wide range of customizable applications across multimedia interactions.

Imagine it as a smart, sensor-rich medicine ball that not only responds musically to touch and movement but also gathers meaningful data—supporting therapies from stroke and Traumatic Brain Injury (TBI) recovery to multimodal interventions for children on the Autism spectrum.



# Enchanted artifacts

The immersive theater collective Four Larks commissioned us to create a sound installation in collaboration with their artistic direction for Los Angeles Chamber Orchestra's first "Session" concert, at Angel City Brewery, in Downtown Los Angeles.



**A multichannel immersive sound installation that plays on the relationships between materiality, memory, and resonance**

We imagined enchanted artifacts, embedded as multiple sound sources, belonging to and informing this unique concert venue. Prepared with transducers and behaving as nodes in a multichannel spatialized sound system, a pot on the shelf, an old photo, a lamp, a glass beer jug, all can become musically enchanted objects.

Imagine an audience before a concert (or at intermission) surrounded and immersed by sound sources hidden in plain sight.

Large glass jugs hanging from the ceiling emanate sounds of bowed metals, glass, and other natural sounds, creating a gentle tapestry of resonances that move throughout the space and guide concert engagement.

Imagine sounds
gradually building
in density, speed,
intensity, and
motion over
long durations.
A ceremonial
resonance fills the
entire room, before
slowly subsiding to
signal the beginning
of the program—or
other moments
of repose and
development.

During
intermission,
recorded fragments
of the music
just heard swirl
softly through
the space and the
audience socializes
and reflects.
The memory of
performances
continues to enchant
the room.

Imagine water
droplets playing
quietly from various
points in space,
while gradually
growing in presence,
until they become
a full rainstorm
that fills the entire
room before
slowly subsiding to
complete the event.

Glass Jugs prepared with transducers are suspended from the ceiling in a spatialized array of uncanny sound sources. They feel at home in the brewery environment, and go unnoticed until they begin their sonic choreography.

# Haptic systems for immersion

# Adidas: Project Harden

A 4D 360-VR experience, complete with an immersive custom-built and programmed haptic system, with wind and floor effects synced to VR content.

With creative agency, Tool of North America, the VR experience officially kicked off the Project Harden social campaign (@projectharden) and provided a sneak preview of James Harden's then upcoming shoe release.

We designed and developed the core haptic system and sound design for the audio-driven floors, integrating tactile transducers with lighting and fan systems.



The installation travelled from the Adidas Level 3 basketball camp at Planet Hollywood in Las Vegas, NV; to the Houston Galleria Mall in Houston, TX; the Seventh Letter Art Gallery in Los Angeles; and four Houston-area Dick's Sporting Goods locations.

# Sound sculpture

## Materials: Original music and audio design, steel pipes, steel base on casters, wires, vegetation

**Dimensions: 112 × 120 × 100 in. (L × W × H)**

# Diffracted symphony

A sound sculpture inspired by the rib cage of a whale washed ashore, with music from Verdi's Requiem re-imagined as a funeral mass for the fragile state of the Earth's ecosystems

# Excerpts from the Dallas Symphony Orchestra's performance of Verdi's Requiem are re-composed, and embodied in this 3-ton steel sculpture and musical composition.

Heath Interactive designed the audio system and contributed to musical composition and sound design. Diffracted Symphony (with artist Sebastien León and sound designer Stephen Dewey of Machine Head) was exhibited at NorthPark Center, Dallas, surrounded by five Hammering Men by Jonathan Borofsky.

**Instruments designed to meet with our body and inspire our mind**

# Sonic Mycellium

A collaboration with multimedia and textile artist, Liberty Worth, prepared for The Arcade of Hypermodernity exhibition at Studio Channel Islands, curated by Jason Jenn & Vojislav Radovanović

# The tactile experience of fabrics begging to be touched... The way we hear music through our skin:

Textiles to evelope us... music to unravel us
and light to draw us in...

# Come.
# Play.
# Touch.
# Experience.
# Wonder.

*"The Arcade of Hypermodernity proposes a multisensory experience where imaginations are set free amidst a backdrop of contemporary challenges and technological innovation."*

- Curators, Jason Jenn & Vojislav Radovanović

# Permanent Installation at the Cayton Children's Museum in Santa Monica, California

# Wishing wall &
# Glowing together

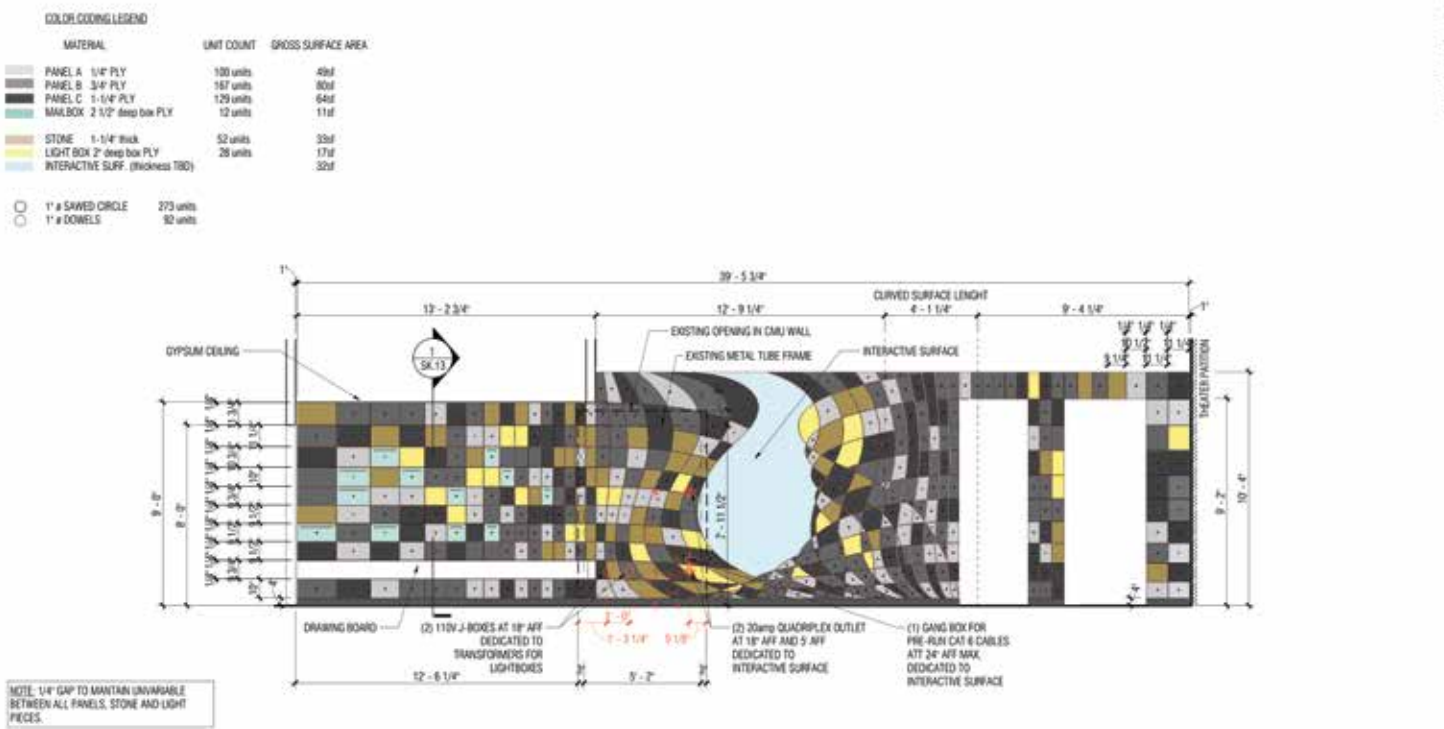
An interactive experience for two integrated exhibits
at the Cayton Children's Museum

## An original quilt-like textile interface—embedded with light, sound, and haptics—comes alive through custom software, innovative hardware, and musical design.

The intention was to shape a space for calm reflection and aspirational imagination. At the heart of this is the "Wishing Wall," where children and visitors may write down a wish, reflection, or dream, and place it along the wall. In sharing these intentions, the community practices empathy and compassion for themselves, for one another, and for the wider world. As participants play together, unexpected constellations of light, music, and vibration emerge, transforming the space into a living chorus of collective imagination.

With "Glowing Together," when you place your hand on the fabric, your intent becomes activated and your wishes become part of the collaborative experience of the wall: trails of colored light climb the fabric, and musical harmonies heard and felt emerge and evolve.

We felt that a children's museum can also be a place for the highest quality design and fine art experiences, and that musical engagement could be a powerful contributor to the prosocial environment that the Cayton museum leadership was seeking to create.




## WISHING WALL - UNFOLDED ELEVATION 1

SCALE: 1/4" = 1'-0"

**SK.12**

NORTH

SCALE: 1/4" = 1'-0"

0' 8' 16' 32'

EX-WISHING WALL - UNFOLDED ELEVATION | 03/20/19

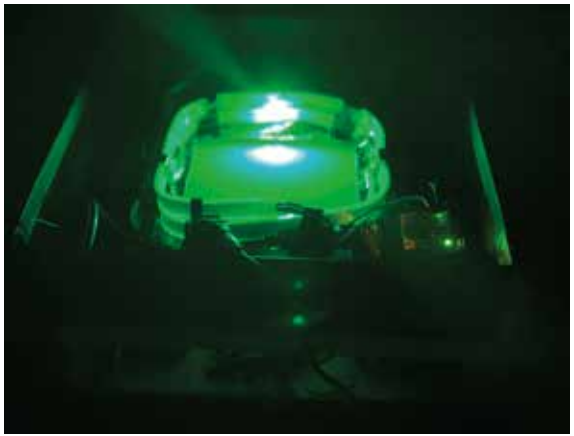
R&A | Shanvillet | CAYTON CHILDREN'S MUSEUM by Shanvillet

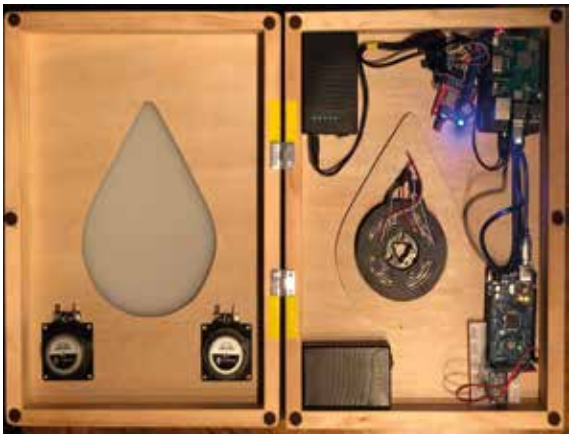
## The Wishing Wall is made of a fabric interface that controls over 3,000 LEDs, musical sounds, and tactile vibrations.

We believe that children deserve a space to experience and interact with unique visual and multimedia artwork, that also presents a strong point of view and hand-crafted sensibility.

An important value we shared throughout the development of this project was the aspiration that the museum could become more than a place of play and discovery—it could be a sanctuary where children learn to build culture through art and music.

It could be a place where individual creativity flourishes alongside collective participation: where empathy, imagination, and self-expression are nurtured; not in isolation, but in the shared company of others. In this way, the museum holds the potential to model a vision of community in which children grow to be their best selves.





"The Wishing Wall" and "Glowing Together" are the result of a collaboration with the architects at Office Untitled, who designed the museum and the undulating form of the wall itself; as well as Stefano Novelli Designs and Voila! Creative Studio, who fabricated and installed the wall and wooden framework.

At Heath Interactive, we contributed original fabric sensor solutions, developed original music and sound design, and created custom software to orchestrate LED animations and all other interactions—bringing to life the poetics and storytelling embodied within the space.

**Musical games, social interactions, musically reinforced therapies, and free play for clinicians, researchers, patients, families, and caregivers**

# The musical playground

The Huunat Interactive Musical Playground at Casa Colina Hospital and Centers for Healthcare provides a technology-driven environment where interactive sculptural installations offer children with disabilities, along with their families and caregivers, direct and visceral access to musical experiences and their well-documented benefits.

**Through a variety of custom designed features, the playground supports clinical care to target motor skills, social skills, and language development; as well as to augment traditional physical and occupational therapies.**

*"Heath Interactive has helped our team to merge musical innovation and whimsy with clinical care. It has been a delight to brainstorm with them to develop new therapy tools with our specific patient population in mind and with the insight and input of our clinical care team."*

Dr. Michele Alaníz, Occupational Therapist and Clinical Director at the Children's Services Center at Casa Colina Hospital

## Off-the-shelf solutions often fail to address the unique challenges faced by each child and their therapists.

Through our mission-driven partnership with Casa Colina, we were able to design and develop tailored interactive interventions—combining bespoke design with targeted software, hardware, and musical development.

Therapists are active participants in shaping the form and function of the playground, ensuring it adapts to evolving therapeutic needs through precise, yet flexible musical interactions.

Together, we set out to enhance clinical care by creating a specialized playground—augmented with sensors, lights, and musical outputs for rich musical feedback, all features are designed to be both intuitive and easily adopted by clinicians and their patients.

*"My client needs lots of strategies to help with regulation (both bodily and emotional). Prior to the musical playground, he would only be attentive to therapy for 30 minutes at a time, due to poor regulation.*

*His parents and I have been brainstorming a variety of strategies and sensory breaks and realized that music not only brought him joy, but it also was a useful tool to help him regulate.*

*Ever since the Musical Playground has been available to him, he has appropriately requested breaks throughout the session to utilize the playground to help with body and emotional regulation.*

*He loves listening to the music as he walks up the stairs, and he demonstrates improved breathing patterns while watching the Sensory Portal. He loves the musical playground and is now participating in the full hour of therapy!"*

Patricia Ling, Occupational Thearapist

A series of customizable interactive musical play structures can provide rich musical experiences that support dynamic, innovative therapies with significant clinical benefits. A sensorized musical staircase becomes a creative instrument for advancing structured physical, occupational, and cognitive therapies.

Music-supported therapies can enhance patient motivation and compliance; provide opportunities for extensive practice; and offer continuous auditory feedback that enables immediate correction and self-regulation.

*"I use the Musical Stairs with a 10-year-old client diagnosed with a seizure disorder and a genetic condition. She has muscle weakness and visual impairments, yet she loves working on the stairs because she can feel the vibrations from the sounds and hear the different musical elements. That sensory feedback both guides her and keeps her motivated."*

Freda Godinez, Physical Therapist

Prosocial and intergenerational play engages parents, caregivers, and children, in shared experiences that are critical to physical, social, and emotional development.

We know that music can be a powerful bridge between people—an added layer of communication and emotional resonance. Children on the autism spectrum often recognize emotional signals conveyed through music, even when they may struggle to perceive emotions expressed through speech.

Group sessions driven by musical feedback bring participants together in coordinated play, ensuring meaningful and enjoyable shared experiences. In this way, music transforms therapy into a joyful practice that naturally fosters social and emotional bonds, while opening new pathways for growth and connection.

We are deeply passionate about excellence in design and execution, seeing it as essential to supporting the highest quality of clinical care, and fostering the richest possible engagements for children's therapeutic experiences. Each child should feel that the environment was created especially for them, with every detail shaped by purpose, infused with imagination, and emanating whimsy.

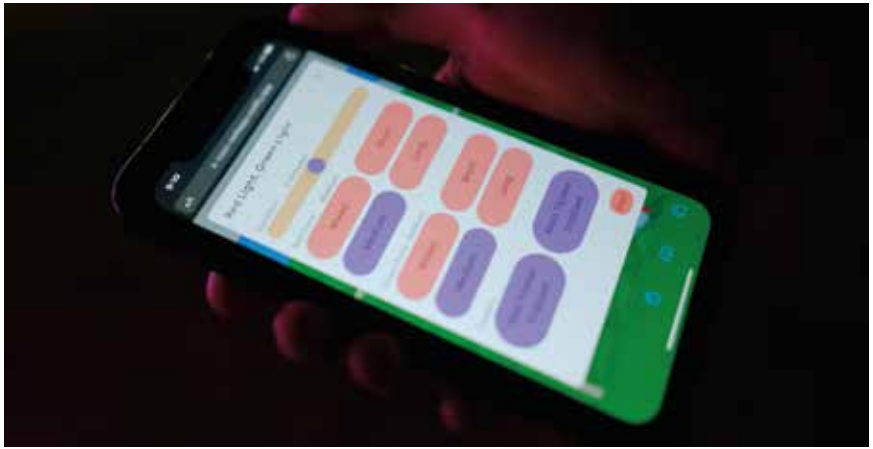
We hope that by creating new ways to facilitate musical engagement, we can bring greater joy to the process of healing; and deeper sensitivity to how we navigate our complex world together.

# Heath Interactive's Musical Playground is a cutting-edge therapeutic tool designed to support children with autism and other developmental differences.

Our **web-based application** offers clinicians the ability to customize every aspect of the playground in real-time, ensuring each session is tailored to the unique needs and preferences of the child.

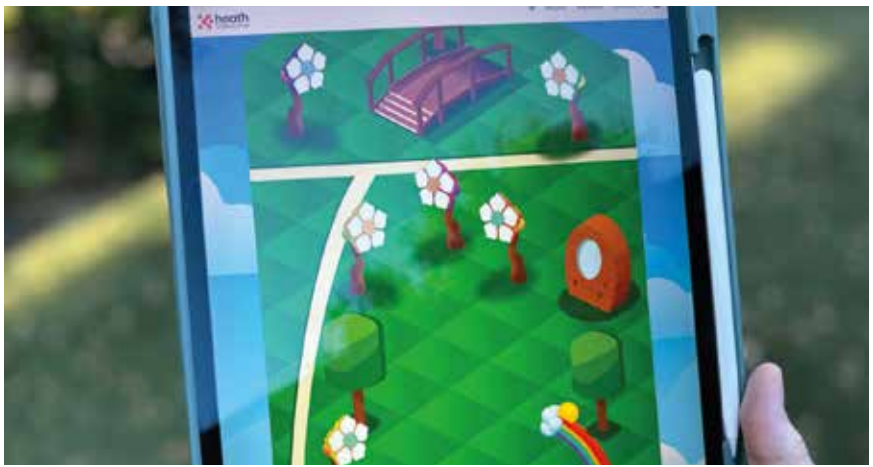
Providing children with choices within the playground fosters a sense of agency and authorship. When children feel that their decisions influence the environment, it enhances motivation and participation.

Allowing a child to choose their preferred sound library—be it train sounds or deep bass—can make the experience more personally meaningful. This empowerment supports self-regulation, as children learn to make choices that help them manage sensory input and emotional responses.



## Game Mode Configuration

Modify game modes and their parameters on-the-fly to match each child's developmental level and therapeutic goals.



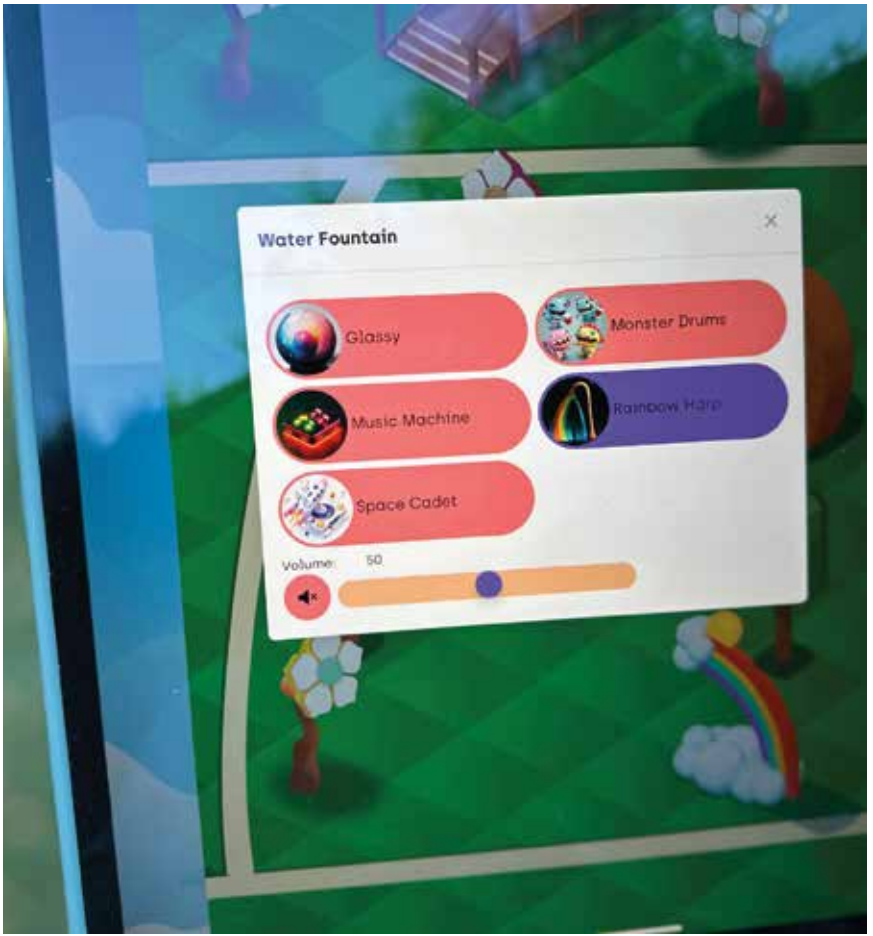
## Sound Library Customization

Select from a diverse range of sound libraries, from trains to farm animals, and a variety of colorful musical styles.

These sound worlds are designed to align with each child's unique sensory preferences.

## Volume Control

Adjust sound levels instantly to accommodate sensory sensitivities, ensuring a comfortable and engaging experience.



# Immediate and Flexible Customization

Personalized interventions are crucial in therapy for children with autism, as each child presents unique strengths and challenges. The ability to adapt the playground's interactive features in real-time allows clinicians to create an environment that responds to the child's immediate needs, and enhances engagement and adoption.

The adaptability of the The Huunat Interactive Musical Playground ensures that therapeutic activities remain engaging, even when challenging.

By aligning the interactive elements with each child's preferences and therapeutic goals, clinicians can better sustain their interest and willingness to participate, leading to more effective and collaborative therapy sessions.

**Transform physical and occupational therapies into a musical adventure, with steps that play music as you climb to the top**

# Musical stairs

Permanent interactive installation at the Children's Center, Casa Colina Hospital and Centers for Healthcare

Multiple game modes challenge children as they engage in their personalized structured therapies. Dynamic musical feedback rewards them as they improve their outcomes in a real-world, yet playful environment.

Every child on the autism spectrum is unique, so when designing our interactive Musical Stairs we incorporated varying heights to better meet individual needs. We tested sensorized stair treads and LED light boxes across both stair courses to ensure apropiate fit and accessibility.

*"I use the Musical Stairs with a patient who has neurofibromatosis and impaired balance. The installation transforms balance and coordination training into an engaging experience. For example, we create memory-based challenges—activating or avoiding specific sounds (such as the 'space theme' radio communications) depending on the step sequence. This approach not only improves his balance and coordination, but also adds a cognitive layer, turning therapy into a playful competition between patient and therapist."*

Michael Chang, Physical Therapist

# Musical portal swirling with oceanic currents

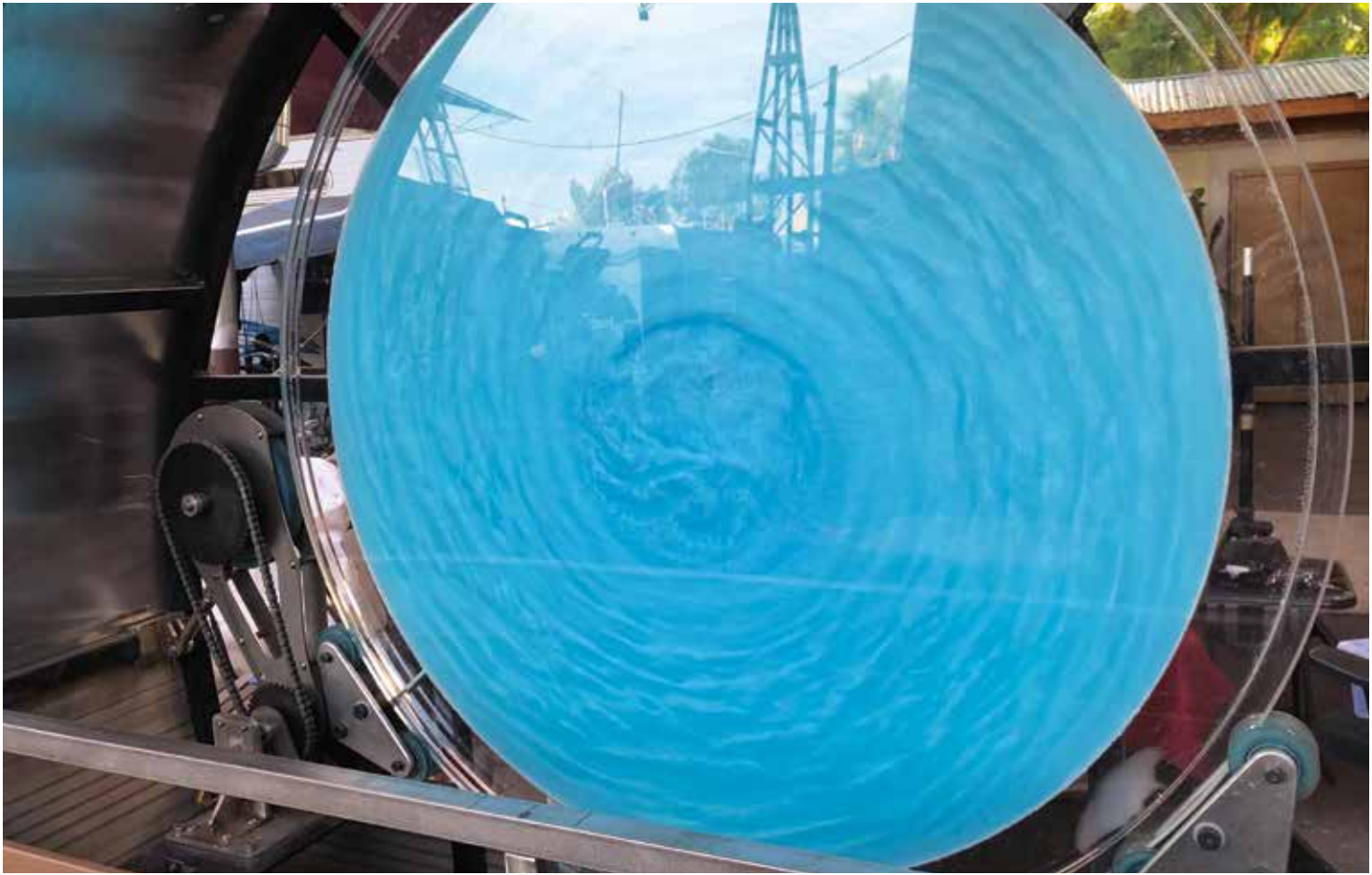
# Sensory Portal

Permanent interactive installation at the Children's Center, Casa Colina Hospital and Centers for Healthcare

As you turn the crank, the fluid spirals and music emerges. Suspended particles catch the light, revealing intricate patterns within the currents. Like a giant music box, the experience places the speed of musical motion directly in your hands.

*"I use the Music Box (Sensory Portal) with a young client who experienced a stroke before birth, resulting in left-sided weakness. The Music Box helps him strengthen his left arm and hand while making therapy enjoyable. The music motivates him to work longer—especially when he's trying to hear his favorite song. For him, therapy feels less like hard work and more like play."*

Dr. Michele Alaníz, Occupational Therapist and Clinical Director at the Children's Services Center at Casa Colina Hospital








**An array of Musical Conductor Pads rewards the children as they reach the top of the stairs.**

# Musical conductor pads

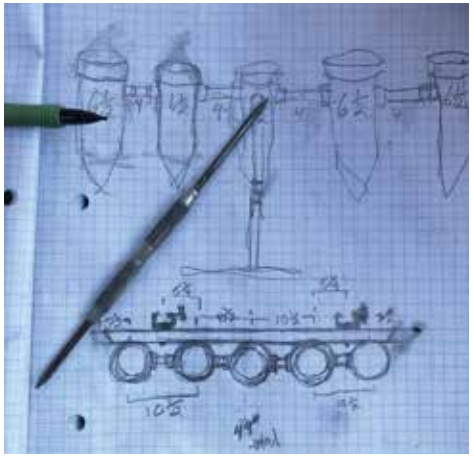
Permanent interactive installation at the Children's Center, Casa Colina Hospital and Centers for Healthcare

## Children are given a unique perspective, where they can ‘conduct’ music across the entire playground simply by tapping and sliding their hands along interactive pads.

These pads come alive with glowing animations, guiding children through melodic and rhythmic patterns, and sparking social games that coordinate with other playground features.

Children awaken glowing animations that guide them through melodic puzzles and playful scavenger hunts.

What begins as touch grows into collaboration, creativity, and wonder—transforming the playground into a living orchestra guided by its youngest conductors.



# Living instruments of light and sound

# Sound flowers

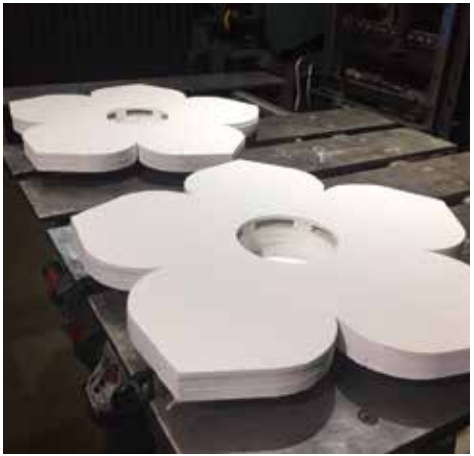
Permanent interactive installation at the Children's Center, Casa Colina Hospital and Centers for Healthcare

Heath Interactive's Sound Flowers are more than sculptures—they are living instruments of light and sound. Designed for inclusivity, they spark moments of joy and discovery for children, families, and therapists alike. Each flower blooms with music at the touch of a hand, transforming the playground into a symphony of playful discovery,

Six interactive musical sculptures are made of bronze, fiberglass, aluminum, 3D printed parts, custom sensors, and audio systems. They are touch sensitive, with light and sound feedback, and were custom designed to support and enhance a variety of gamified Autism therapies.

## Spread throughout the playground, the Sound Flowers encourage children to run through the environment solving musical puzzles and completing musical obstacle courses that stimulate their minds as well as exercise their bodies.

The Sound Flowers can be coordinated to tell stories and create gamified musical scavenger hunts. They can support structured activities, or socialization and speech games, and are currently in daily use during free play and structured therapy hours.

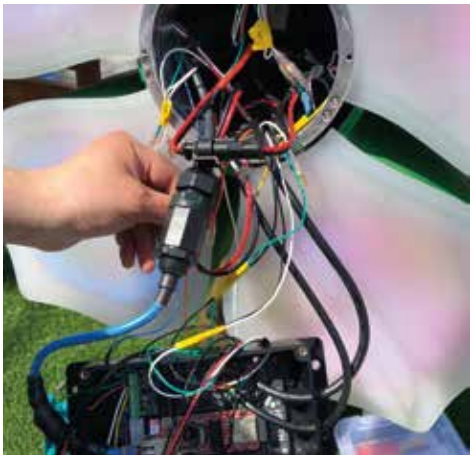












## Rich Sensory Experiences

Sensory experiences enhance intrinsic motivation, support overall well-being, and serve as a cornerstone of play. Light, color, sound and music combine to create integrated feedback that engages both body and mind.

## Structured Play with Musical Feedback

Musical games are designed to target neurotiming, motor coordination, executive functions, working memory, attention, and self-regulation.

## Multimodal and Multisystem Engagement

Musical experiences are inherently multimodal, stimulating multiple brain regions including motor, perceptual, language, and social-emotional systems.

**Interactive musical stepping stones, with lights, sounds, and tactile vibrations**

# Magic pebbles

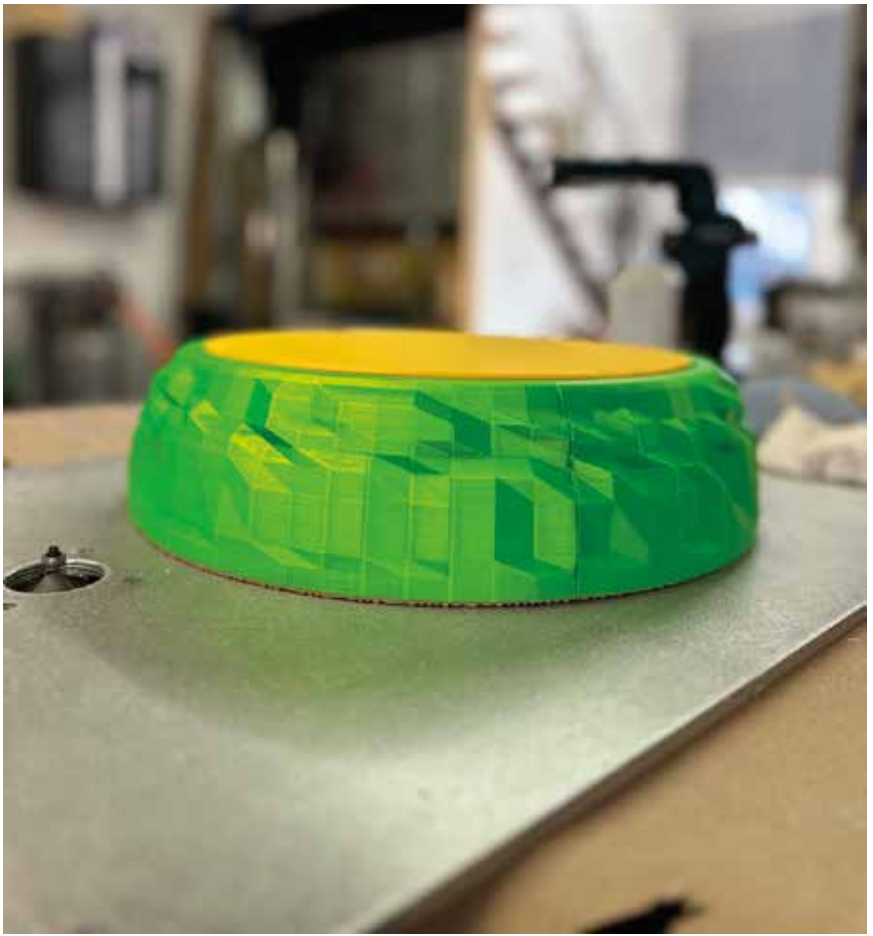
Wireless interactive devices at the Children's Center,
Casa Colina Hospital and Centers for Healthcare






Designed in close collaboration with Casa Colina's clinical team, these one-of-a-kind Magic Pebbles are wireless and moveable, creating ad hoc classrooms and improvised obstacle courses. They are reconfigurable for endless structured therapeutic activities with musical feedback.

Each Pebble is meticulously hand-assembled in our custom shop. Inside, they contain force sensors, premium marine-grade speakers, an audio amplifier, two custom circuit boards, 720 LED pixels, and two microcontrollers—one dedicated to sensor input, lighting controls, and wireless communications; and the other powering a custom-built audio engine—along with dual batteries that drive audio playback, LED animations, and microcontrollers.



## Each Pebble carries its own intelligence, running custom firmware and original software that weave sound, light, and play into seamless harmony.

They connect to a central server that orchestrates game modes, audio playback settings, and luminous patterns, while custom audio libraries give each interaction its own voice.

# The sensory power of water meets customized musical experiences

# Water harp

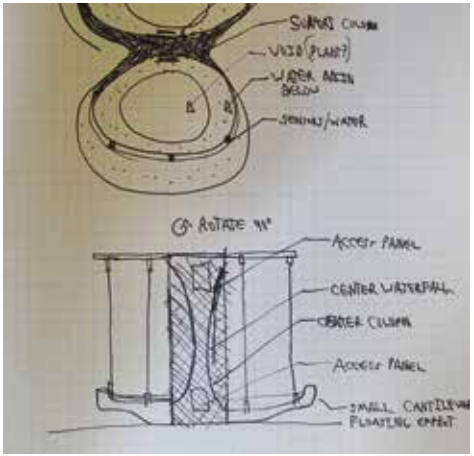
*“The kids absolutely loved the rainbow! They went crazy for it! How fun! I had one little girl who is very impaired and hardly plays and she was mesmerized. When it was time to go she kept stopping and looking back at the rainbow like she was in awe. It was so cool!”*

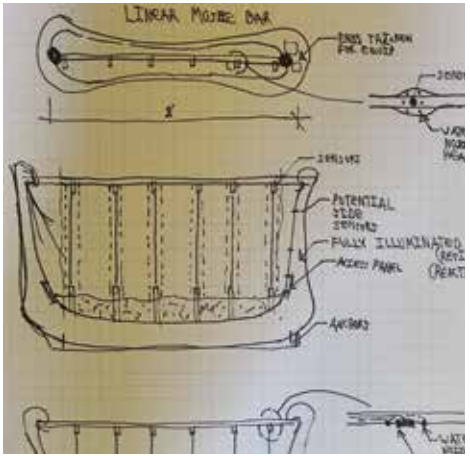
Dr. Michele Alaníz, Occupational Therapist and Clinical Director at the Children's Services Center at Casa Colina Hospital

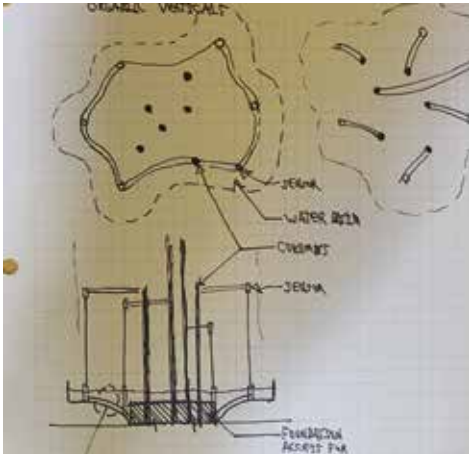
Permanent interactive installation at the Children’s Center, Casa Colina Hospital and Centers for Healthcare

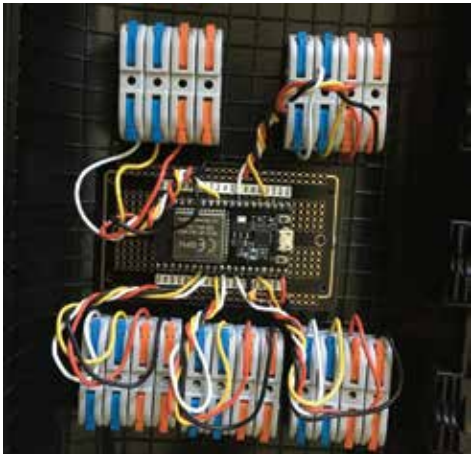
## Children pluck and stroke the fountain's streams, playing melodies while exploring the sensation of the water.

This large custom fine art sculpture and interactive musical water fountain is imbued with original musical mappings and uncanny expressive capabilities, creating a truly groundbreaking and iconic feature at Casa Colina's Children's Center.


ROTATE 90°
ACCESS PANEL
CENTER WATERFALL
ACCESS PANEL


LINEAR MISTER BAR
POTENTIAL
FULLY ILLUMINATED


WATER BASIN






EXIT


This interactive musical water fountain stands at nearly nine feet tall: a massively playful sculpture, making music by exploring the individual streams of water.

Children engaged in clinically structured therapies can enjoy this custom, one-of-a-kind attraction, immersing themselves in water-play that provides rich sensory feedback.

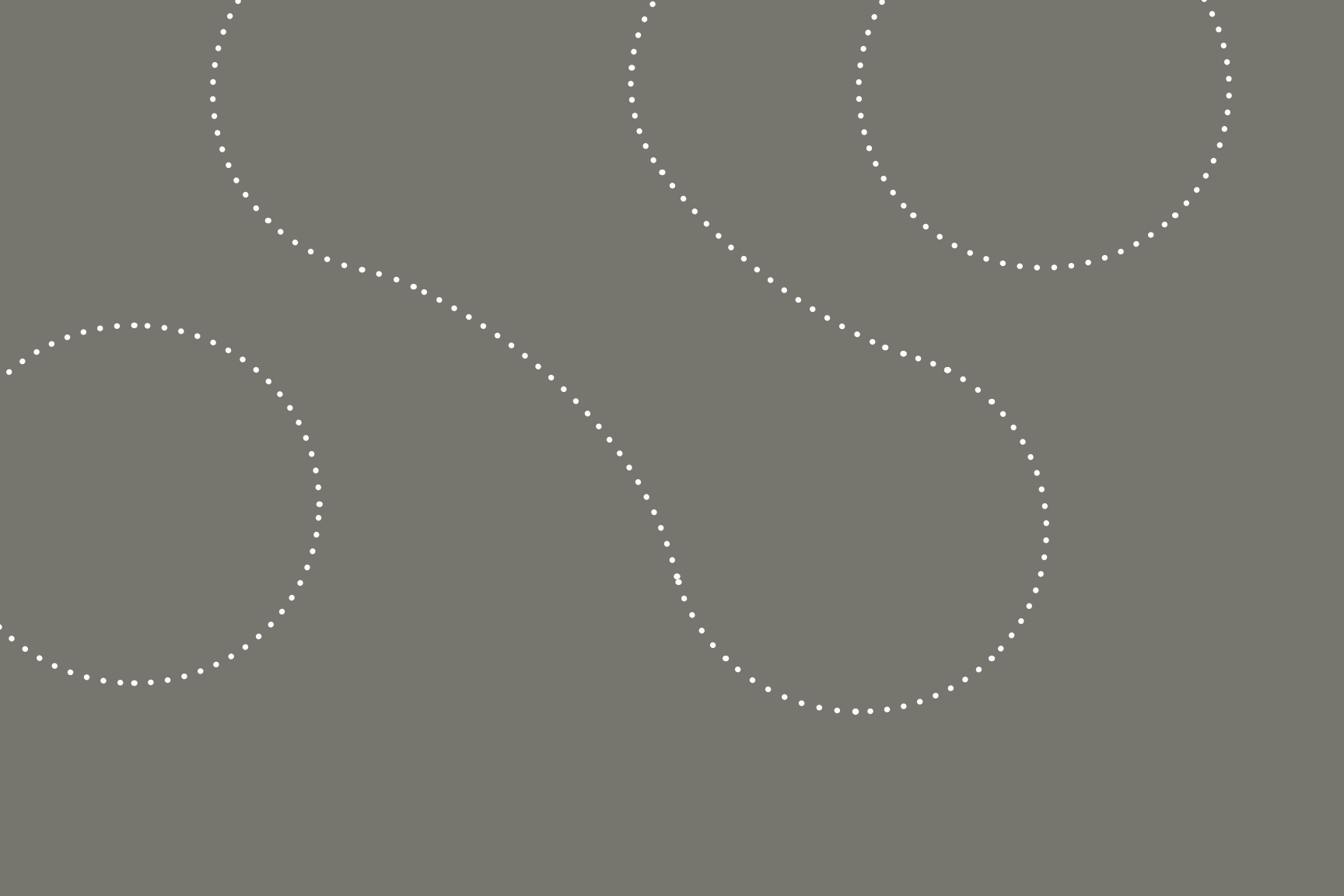
Players can choose from a spectrum of instrument sounds and sonic mappings, extending engagement by shaping the Water Harp to suit the sensitivities of each moment.

This feature can be integrated into playground-wide games alongside other interactive musical features: everything is connected for endless possibilities in musically gamified therapeutic applications.

The Water Harp's custom-designed system continuously senses the distance between hands and flowing streams, triggering an endless variety of sounds across all five sensors in real-time. Water itself becomes the instrument.

Unlike systems that simply register presence or absence, this design captures the nuance of every gesture, enriching the experience with responsive musical feedback. Each movement invites children to explore the water more deeply, discovering new textures through play.

With both hands in motion, they combine streams into spontaneous harmonies and instant musical landscapes. Instrument voices, scales, and tonal ranges can shift instantly, ensuring every child's encounter is personal, adaptable, and uniquely their own.



# Contributors & Collaborators

## This section highlights a selection of the many people who have shaped our work.

Some are core members of Heath Interactive, others join us for specific projects, and still others contribute in ways less visible but no less meaningful. Together, they form the wider creative fabric behind these immersive musical platforms.

**Dr. Jason Heath**

is an inventor, patent holder, composer, and experiential designer leveraging the power of musical experience to create new installations, devices, interactions, and dynamic cultural artifacts that challenge and inspire the human mind and body. He founded Heath Interactive as a vehicle to integrate the unique combination of interdisciplinary expertise required to create seamless, immersive and embodied experience platforms (especially those involving music and sound); and to build a team that can execute visionary solutions to creative problems at the highest level.

**Dr. Ian Hattwick**

focuses on the creation and use of digital systems for unique musical experiences, with particular interest in multimodal hardware systems to explore and facilitate social and embodied interaction. He received his Ph.D. from McGill University and holds degrees from the University of California, Irvine and the University of Southern California. In addition to being an essential team member of Heath Interactive, Dr. Hattwick teaches Music Technology and Digital Instrument Design at the Massachusetts Institute of Technology (MIT).

**Shawn Greenwood**

is an industrial designer and fabricator with extensive experience in architectural and mechanical design; lighting and water systems; and custom tooling. A graduate of Art Center College of Design, he is passionate about creating bespoke designs that demand specialized mechanical solutions and novel engineering. His inventive approach to R&D and rapid prototyping anticipates traditional fabrication processes while remaining innovative and sensitive to custom applications.

**Ellie Kelly**

is passionate about applying her expertise in Computer Science, Electrical Engineering, and Digital Musical Instrument Design to expand access to musical experiences. At Heath Interactive, she has focused on software development, rapid prototyping, circuit design, and audio programming. She holds an undergraduate degree in Computer Science with a secondary concentration in Music from Harvard University and is currently pursuing a Master's in Electronic Instrument Design at McGill University's IDMIL.

**Lark Savoldy**

is an engineer and musician with a passion for expanding the existing modalities of musical interaction, performance, and exploration through electronic interfaces. Their background ranges from researching novel methods of blending software with hardware controllers to instrumental performance in orchestras and jazz combos. They hold a B.S. in Music and Electrical Engineering and Computer Science; as well as an M.Eng. from the Massachusetts Institute of Technology (MIT).

**Eli Rosenkim**

is an instrument maker, improviser and lover of all things sound. He is a cellist and passionate player of the Daxophone, a rare bowed idiophone. His other work centers around building new electronic instruments for exploring alternative tunings and cybernetic/connectionist network paradigms. When not making sound, he can be found “pouring” over tea. He is currently pursuing degrees in electrical engineering and music at Oberlin College and Columbia University.

**Autumn Rogers**

is an artist, designer, and full-stack software developer fascinated with the ever-blurrier boundaries between biology and technology. With extensive back and front-end web experience, networking and communications, and expertise in microcontrollers and sensor systems development, Rogers develops innovative technologies that empower new visceral human experiences and performance modalities. She holds an MFA in Arts and Technology from The California Institute of the Arts.

**Kate Terbush**

is a toy designer and planet activist. As a former child herself, Kate is passionate about designing sustainable and engaging toys for future generations that serve both humans and the world in which they live. She specializes in model prototyping, character design and plush patterning, but can learn almost anything you throw her way.

She is currently pursuing her degree in Toy Design at Otis College of Art and Design, with a minor in sustainability.

**Brennen Huller**

has over twenty years of experience in interactive installation, urban design and planning, architecture, structural engineering, interior design, and fabrication. He received a Master of Design Research from The Southern California Institute of Architecture (SCI-Arc), where he focused on advanced construction techniques utilizing robotics and composite materials. He has worked for internationally recognized firms including Archimorphic, Stantec, Eric Owen Moss Architects, and Amphibianarc.

**Ernesto Bolaños**

is an electronic musician and media consultant with more than 20 years of experience in multimedia and editorial design. His work spans social media campaigns, photography, print layout, web design, and graphic design, always driven by the belief that great storytelling unfolds across all media platforms in harmony. His combined academic background in Anthropology and Editorial Design empowers him to help diverse organizations shape and express narratives that feel both authentic and distinctive across every medium.

**Stefano Novelli**

is a designer, fabricator, artist, sculptor and welder. He and his crew love a good challenge and big ideas. Taking on outrageous projects with tight deadlines not only keeps their work exciting, but it also demands creative problem-solving and allows them to step outside of the box and experiment.

**Eric Mesplé**

is a tireless innovator, sought out for projects in fine art, technology, energy, healthcare, transportation, and entertainment. He has worked for clients including Intel, Hyperloop, Google, Red Bull, Cedar Fair, MGM Grand Hotel & Casino, Denver International Airport, Smithsonian Museum, The White House, and the U.S. Military. He earned his Bachelor of Fine Art in Sculpture from Rocky Mountain College of Art and Design. He holds a Master of Science in Arts, Computer Science, and Engineering from the University of California, Irvine.

**Hector Carillo**

is an MIT graduate driven by a passion for math and education, and working as a full-stack engineer in the education and healthcare spaces. He has worked with Heath Interactive to implement web-based applications for global controls at the interactive Musical Playground at Casa Colina Hospital.

**Desmend Fregoso**

is trained in Architecture and 3D design. He is passionate about applying his physical designs and love of materials to serve new musical interactions and experiences at a variety of scales. A recent graduate of the internationally renowned Southern California Institute of Architecture (SCI-Arc), he brings an architectural mind to the development of new musical systems and functional sculpture.

# Onward and Beyond

At the heart of our work is the pursuit of musically charged flow—that rare and universal state where challenge, creativity, and presence come together seamlessly.

When sound, movement, light, and touch align, they invite us into moments of deep focus, joy, and connection. These are not luxuries, but essential human experiences that nourish growth, healing, and imagination.

As Heath Interactive continues to evolve, we envision bringing these experiences to wider communities, diverse populations, and new products that embody the ethos of meaningful musical engagement.

We imagine a future where such experiences are not rare, but woven with care and intention into everyday environments. We continue to seek affinities with collaborators who share a passion for creative expression, universal access, and lasting impact.

Together, we can widen the reach of what is possible—so that more people, in more places, with greater ease, may find themselves playing in the flow of musical experience.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# **Playing** with **flow**

Immersive Musical Platforms,
the **Heath Interactive** Way

***Playing with flow*** invites you into our studio where art, music, and engineering seamlessly integrate into platforms that respond, resonate, and adapt. It envisions what becomes possible when imagination, design, and purpose converge—where rigor and play coexist, clinical care and wonder reinforce one another, and environments become instruments that draw us into deeper engagement together.

**heathinteractive**.com