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Interspecial Signal

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Abstract

Plants and humans interact with the world through profoundly different systems. While plants are known to sense their environment, whether they perceive it remains an open scientific question (Ferretti et al., 2025). *Interspecial Signal* makes audible the electrical life of a living plant, placing that open question in the listener. A pothos plant is connected to Biotron, a consumer-grade controller that converts changes in the plant's bioelectrical conductivity into MIDI data in real time. That data drives bell-like tones, a radiating visual field, and Somax2, an AI improvisation system trained on a corpus of the author's own voice, which shadows the plant's signal like an invisible vocalist. Audiences are invited to approach, gesture, and listen, and their proximity shapes what they hear and see. In that shared capacity for sensing, the work offers a point of entry into empathy with a form of life that can otherwise feel wholly alien. This paper documents the work's development across a campus pilot, a conference video, and a museum showing, drawing on audience observations and research on plant awareness disparity. The result is a three-way co-creation between plant, algorithm, and audience, rooted in the proposition that care for the nonhuman world might begin somewhere as small as one "sensational" encounter.

Keywords: AI co-improvisation; interactive installation; bioart; environmental art; plant electrophysiology

1. Development of Work

I have studied environmental psychology as part of my undergraduate degree path, curious to learn about effective ways of communicating environmental messages and how to use these methods to increase empathy for nature through the arts. STEM-centered techniques increase awareness of environmental issues, while art-based formats yield higher emotional engagement (Liao, 2024). I wondered how I could lean into the emotional engagement aspect and create art utilizing these principles. Through what mechanisms can emotional engagement be increased?

Onorato (1997) observes that "works that incorporate video are always strongly connected to performance work and often present a powerful narrative component" (p. 26), a pairing *Interspecial Signal* builds on by joining live visuals with embodied interaction. Boykoff and Osnes (2019) note that while text has traditionally dominated climate communication, images, participatory experiences, entertainment media, and interactive platforms are increasingly recognized as powerful ways of making climate change meaningful to audiences. I extend this reasoning to environmental issues more broadly, including how people relate to plants. With this work, I aimed to invite the public into a playful encounter that might build lasting appreciation for plant life.

[1] Throughout this paper, first person refers to the first author, Erin E. Murphy. Ashkan Tabatabaie served as advisor and collaborator on the work.

1.1 Experimental Starts

Interspecial Signal was developed in several stages between June 2025 and April 2026. I took a series of botany courses at New College of Florida between the fall of 2024 and spring of 2025 and was struck with a fascination for plant physiology. I grew curious about how plant physiology data could be collected in the field and integrated into an art piece. In particular, I wondered what physiological changes might occur in plants located near water, and how that data could be measured. The answers to my questions in class suggested a lack of accessible instruments for measuring plant physiology data in the field.

Enter Biotron, an affordable, consumer-grade device. Biotron is a music controller that responds to bioelectrical changes in plants in real time, with settings the user adjusts through a web browser. By the "luck" of the Instagram algorithm, advertisements introduced me to this tool, which then became the center of this artistic and interpretive exploration. I reviewed examples of others' uses of the controller, including demo videos created in partnership with Playtronica (Musical Miscellany & More, 2024; Playtronica, 2025).

I purchased a Biotron in June 2025, at the tail end of a work obligation in the northeastern United States, and experimented with the settings on a store-bought houseplant. My original vision was to record the electrical activity in a plant located next to a waterfall. I imagined the end result as something like a snow globe: the plant's "music" playing within a dimensional virtual scene, with a 3D scan of the plant set inside topographic scans of the waterfall and video clips of flowing water. I took Biotron out into the field and attempted to gather samples at several locations, including Zealand Falls in New Hampshire and Cascade Falls in Virginia. Compared to my indoor houseplant tests, results in the field were only sporadically successful. I speculated that factors such as similar-looking plants having separate root systems, attachment to rock, differences in electrical grounding, and other natural conditions contributed to this variation. The first successful sample, a Geum peckii specimen in a rock crevice on the edge of a small cascade (Figure 1), yielded a musically uninteresting vacillation mostly between two notes. Despite this result, obtaining the first live signal in the field was exhilarating.

At Cascade Falls, I chose a *Rhododendron maximum* specimen on the edge of the lower cascades (Figure 2) and recorded approximately 20 minutes of signal. By connecting the plant and leaving it undisturbed for a long duration, I could record the activity from the plant's internal processes outside my own sphere of electrical influence. The MIDI notes spanned Biotron's full six-octave range (Figure 3). I saw this as my first successful proof of concept.



Figure 1. The author at Zealand Falls, New Hampshire, with the first sample source, an Eastern Mountain Avens (*Geum peckii*) specimen.

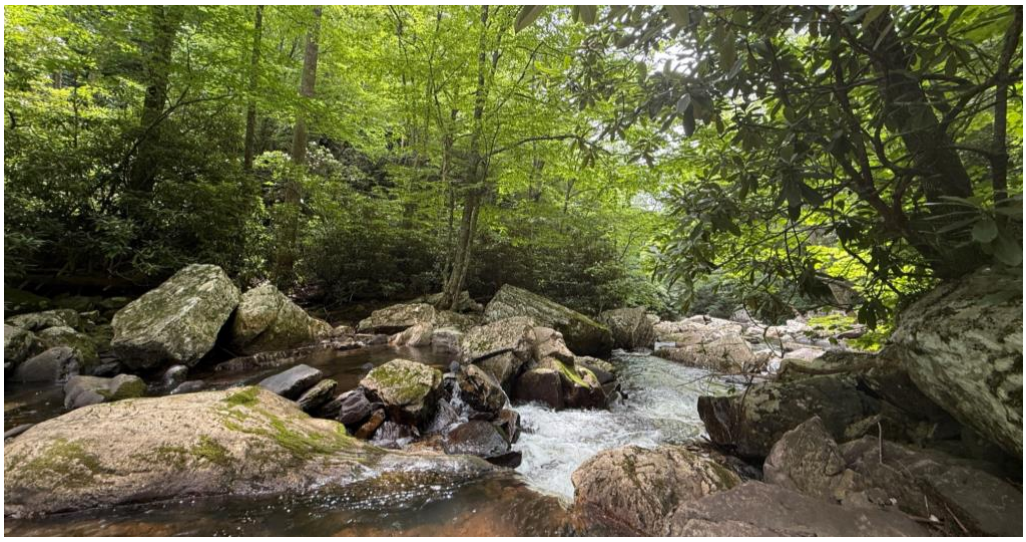


Figure 2. Little Stony Creek, downstream of Cascade Falls in Pembroke, Virginia. The sampled rhododendron is pictured on the right.

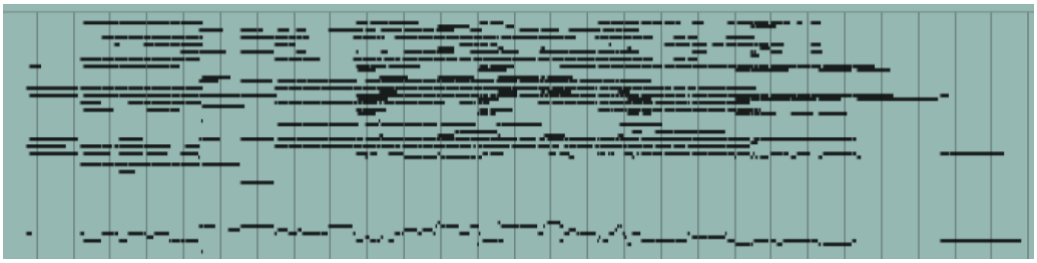


Figure 3. One minute's worth of MIDI data collected from the rhododendron.

1.2 Refining Possibilities

In January 2026, as part of an independent study at New College of Florida developing a portfolio of work, and under guidance and consultation from Ashkan Tabatabaie, I shared my preliminary findings from the previous summer. The data collected were, unfortunately, not interesting when presented in a fixed media format. This inspired the idea to develop an interactive exhibit instead, and refine the settings to yield more musically interesting results. I started by exploring how to measure the electrical field of a plant connected to Biotron, which is influenced by a person moving through space within approximately a meter's distance from the plant. I also explored the literature surrounding plant electrophysiology and plant awareness disparity.

1.2.1 Plant Electrophysiology

Plant electrophysiology has received markedly less research attention than animal or human electrophysiology, even though plant experiments are comparatively less complex, suggesting significant room for research in this field (Madariaga et al., 2024). Plants use electrical signals to coordinate essential biological processes, including photosynthesis, hydraulics, hormone regulation, and stress responses. These signals result from cellular signaling and responses to environmental stimuli such as light, touch, and stress, and are hypothesized to move through the vascular system. By centering the exhibit on electrophysiological data, I hoped to create a responsive experience that would help audiences sense how they influence a plant's activity.

Aratani et al. (2023) offer a concrete example of this kind of signaling in action. When *Arabidopsis* plants were exposed to airborne compounds released by damaged neighbors, the same compounds behind the smell of fresh-cut grass, their leaves first showed a shift in electrical activity, followed by a surge of calcium, a chemical messenger plants use to signal stress. Within 30 to 60 minutes, genes involved in the plant's defenses were switched on. Signaling in pothos may unfold differently, and Biotron registers only a simpler aggregate signal, but the study offers a glimpse of how intricate a single plant's response can be.

1.2.2 Plant Awareness Disparity

Researchers have documented the tendency to overlook plants in our surroundings for over a century (Parsley, 2020). Wandersee and Schussler termed this phenomenon "plant blindness" in 1999, and Parsley (2020) later proposed plant awareness disparity (PAD) as a replacement, since "plant blindness" relies on an ableist disability metaphor. Wandersee and Schussler argued that this inattention leads people to overlook the importance of plants to the biosphere and to human life, to miss the aesthetic and biological distinctiveness of plants, and to rank plants below animals in ways that deem them unworthy of consideration (Wandersee & Schussler, 1999, 2001, as cited in Parsley, 2020). Rather than failing to see plants entirely, people tend to group them into a green backdrop, placing plants in the background of the visual field while animals occupy the foreground (Parsley, 2020). Students may not even perceive plants as fully alive, in part because plants lack immediately observable motion (Yorek et al., 2009, as cited in Parsley, 2020).

This research, which I found after I had already conceptualized *Interspecial Signal,* gave weight to the question I was intuitively exploring. If plants go unnoticed partly because they appear still, an installation that gives a plant an audible and visible response to a visitor's approach might pull it out of the background and into the foreground of attention. Parsley (2020) points to evidence that attention can engage emotion, and that interventions drawing attention to plants can also increase interest in them. Because PAD describes a disparity rather than a fixed condition, it suggests that awareness can shift through experience and education. That awareness shift is what I wanted people to feel when they approached the plant.

2. Methods

2.1 Aesthetics and Perspectives

Interspecial Signal is an interactive sound and visual installation designed to encourage empathy for plants. It offers a sensory experience that playfully "explains" how plants and humans both have electrical fields, and how those fields interact. To create an inviting experience, I prioritized sounds and visuals that were vivid, cheerful, and disarming, evoking science fiction and psychedelia.

Shortly before the first public showing, I came across an interview in which Masatsugu Toyota of Saitama University, co-author of the study described in Section 1.2.1, said, "I really want everybody, especially kids, to understand that plants are very sensitive. Please be gentle to all the plants outside" (Focht, 2024). The quote prompted me to reconsider my approach: was it ethical to subject a living plant to repeated touch from many visitors? I ultimately decided that exposing a hardy houseplant to this contact was a worthwhile trade-off for the chance to shift how audiences relate to plants. Toyota's call for gentleness still shaped the work, most directly in the warning tone described in Section 2.1.1, which asks visitors to take care.

2.1.1 Interaction and Audio

Initially, I was charmed by the idea of a plant generating notes on its own, free of human influence, as an artistic interpretation of its inner activity. During an early-phase demonstration for Tabatabaie, we focused on which aspects would make the most intriguing interactive installation. His feedback led me to adjust several parameters of the physical layout and the instrument's responsiveness. We experimented with note frequency until the pace was fast enough to stay interesting and slow enough that each note could be experienced individually. We also adjusted the sensitivity so that notes triggered only as someone approached the plant, implying one's influence on another being, rather than being generated continuously by the plant's inherent electrical activity.

When piloting this piece with a live audience in February 2026, I observed a wide spectrum of approach behavior. Though the vast majority of attendees approached cautiously and slowly, some approached rapidly and grabbed or pinched the leaves. Because of the settings, once the peak value is reached, no further notes trigger until the signal intensity changes. This rough approach led to uninteresting audio and was antithetical to the intent of the piece, which was to encourage gentle care of plants. To address this, I added a sharp, high-frequency warning tone

that triggers when the peak signal is reached, sonically communicating “Don't touch me” to the audience.

2.1.2 Visuals

In the months before developing *Interspecial Signal*, I created a painting inspired by the color spectrum and the concept of radiating light waves (Figure 4). As I developed the presentation design, I felt the plant needed a visual anchor to draw attention to the exhibit, and since the painting happened to be nearby, I found it made a striking background. Because the piece was too large to transport safely, I digitized it and displayed the image on a television screen.

The association between light waves and the plant's electrical activity is a literal one. Light is the primary energy input driving photosynthesis, the process that underlies plant cellular activity and, by extension, the bioelectrical signal Biotron reads. The radiating light-wave imagery became a representation of the plant's source energy, and therefore our own, since humans ultimately draw energy from plants.

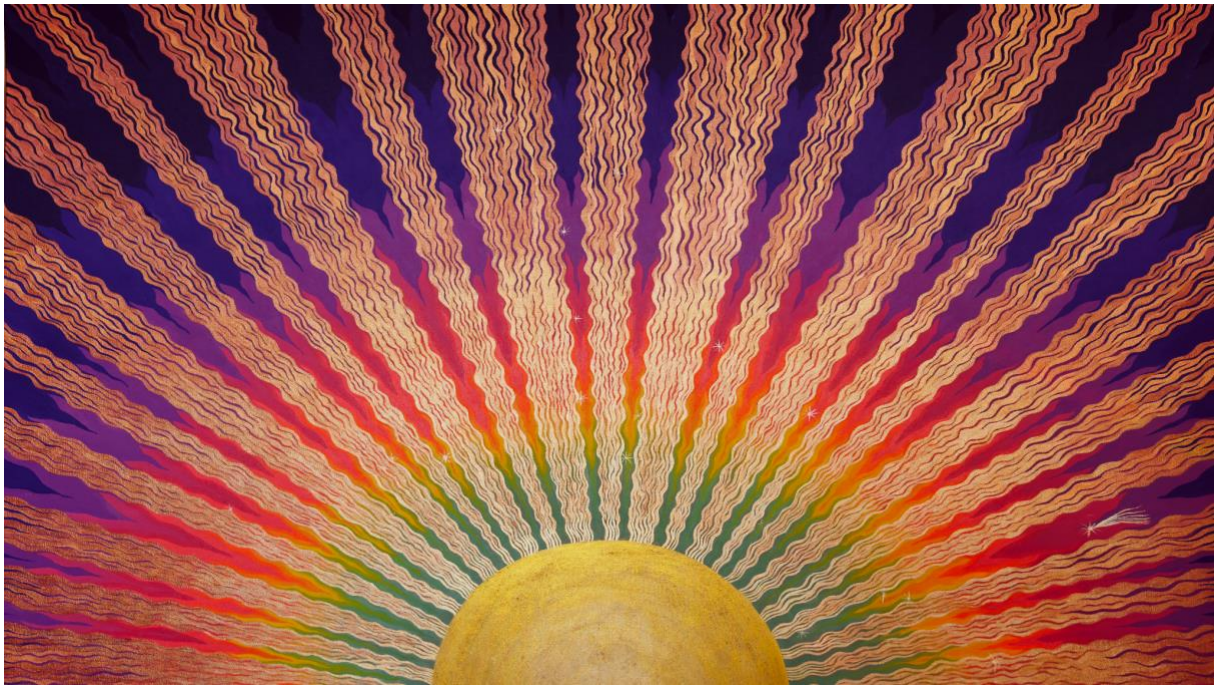


Figure 4. *See the Rays?* Original painting by the author. Acrylic on canvas, 60 x 48 in.

As an additional interactive layer, I added stars that appear in this digital sky in a radial pattern, corresponding to note values from low to high. The instancing of stars, a generative duplication of a single element in response to MIDI input, became a visual representation of the interactive moments created by the audience, appearing and decaying at a rate similar to the musical notes. A feedback and distortion layer caused the image to shimmer continuously in real time, giving the visual field an organic, unstable quality.

2.2 System Design

The installation connects four main components: Biotron, a controller that converts the plant's bioelectrical changes into MIDI notes; Somax2, an artificial intelligence (AI) improvisation application that responds to those notes using a corpus of my voice; Ableton, a digital audio workstation that shapes and mixes the sound; and TouchDesigner, a visual programming environment that generates the on-screen imagery. Each is described in detail below.

The plant connects to Biotron via alligator clips, and Biotron connects to a laptop via USB-C (Figure 5). Biotron sends MIDI data simultaneously to Ableton and Somax2. Somax2 returns its audio to Ableton, where all inputs are mixed, and Ableton passes the MIDI data on to TouchDesigner. The mixed audio is routed through a Scarlett 2i6 interface to two monitor speakers on either side of a television screen, which displays the TouchDesigner output via HDMI in real time. Figure 6 shows all three applications running simultaneously.

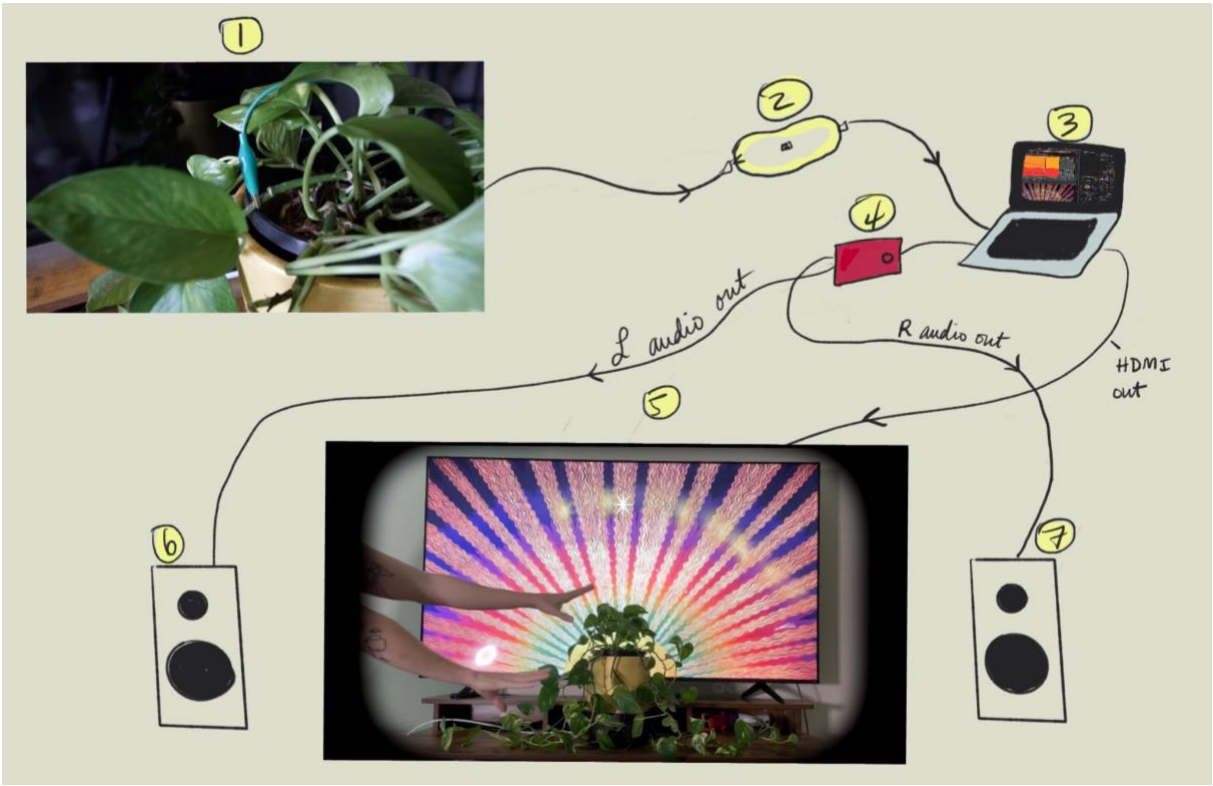


Figure 5. Signal routing diagram: (1) Alligator clips connected to the plant; (2) Biotron; (3) Laptop; (4) Audio interface; (5) Television screen; (6) Left monitor speaker; (7) Right monitor speaker.

2.2.1 Biotron

Biotron measures changes in a plant's bioelectrical conductivity through two channels: channel 1 senses plant activity, and channel 2 senses variations in light (Playtronica, n.d.). The standard setup uses a microcontroller, two leaf pads, and an on-board light sensor to convert these signal variations into MIDI notes. This installation used alligator clips in place of the leaf pads, which

may have affected signal consistency. The microcontroller compares the input signal against a threshold, applies smoothing and sensitivity, and maps the result to the scale and note range set in the parameters (Playtronica, personal communication, September 2, 2026).



Figure 6. Screenshot of Ableton, Somax2 in Max, and TouchDesigner running simultaneously.

Biotron's settings are adjusted by connecting the device to a laptop and navigating to its settings page in the Chrome browser (Playtronica, n.d.). Once the settings were applied, I power-cycled the device and withdrew approximately one meter from the plant so that my electrical influence would not affect calibration. After calibration, I could hear the difference between the plant's uninfluenced and influenced field as I approached. I disabled channel 2, since audience members' bodies would shadow the light sensor and skew the audio.

Settings differed across installations based on room conditions and plant state. Within each showing, periodic recalibration was necessary, as sensitivity tended to drift over extended periods of interaction.

2.2.2 Somax2

Somax2, developed at the Institute for Research and Coordination in Acoustics/Music (IRCAM), is a musical improvisation and composition application for Max that uses a generative AI model to create machine improvisations alongside live audio or MIDI input (IRCAM, n.d.). The system learns from a corpus, a body of recorded material that the application analyzes and segments into fragments. Somax2 draws from those fragments to generate improvised output in response to live input. The Corpus Builder allows the user to add an audio or MIDI file, select preferences, test segmentation, and create a corpus for use in the

Player. The Player allows the user to select an influence source and control the weighting of specific qualities in the output, including the influence of pitch, onset, chroma, and MFCC (mel-frequency cepstral coefficients, capturing timbral characteristics) (IRCAM, n.d.).

I designated Biotron as the MidiInfluencer input, selected MidiInfluencer as the influence source in the Player, and experimented with a variety of corpus recordings before arriving at the final version used in the CCMSAI video submission.

My first corpus recordings were stream-of-consciousness improvisations combining synthesizer sounds and voice poems (Figure 7). These served as initial experiments to see how Somax2 would slice the samples and how the output changed as I adjusted the Player controls. For the final recording, I sang my entire vocal range in half steps, leaving space between notes so Somax2 could sample each one individually. Tabatabaie and I noticed the output did not mirror the MIDI input as closely as we wanted, so we adjusted the chroma parameter to bring inputs and outputs as close as possible. This adjustment reduced the randomness in the output caused by natural micro-variations in pitch in the vocal recording.

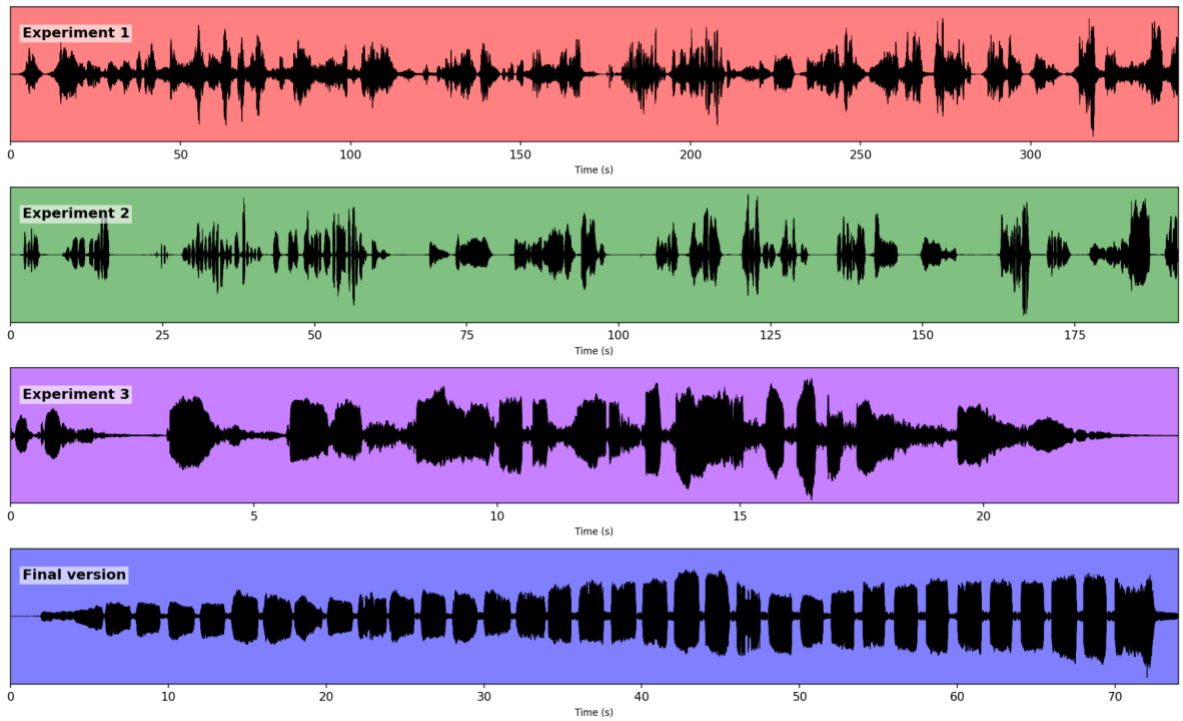


Figure 7. A selection of corpus experiments and the final corpus: Experiment 1, improvisational synthesizer and voice stream; Experiment 2, voice poems with synthesizer; Experiment 3, earlier vocal range experiment; Final version, half-step vocal scale recorded with space between notes for individual sampling.

2.2.3 Ableton

Ableton functions as the audio hub for this work, sending and receiving MIDI and audio from the other components of the installation. A MIDI track receives Biotron's channel 1 data and

plays it through Operator, Ableton's FM synthesizer, using the Warm Chime Keys preset. I transposed the instrument down an octave and used long attack and release settings so each note swells and rings out, then applied an Auto Filter to soften the high end. Several additional tracks receive the same MIDI input, each with different instrument and effect profiles. The Somax2 audio is also processed with effects, including a resonator whose tuning is mapped to the live MIDI note input. The warning tone described in Section 2.1.1 comes from a custom instrument that plays an audio clip mapped only to the highest note of the scale. Ableton passes MIDI data to TouchDesigner through TDAbleton, a toolkit that links the two applications over Open Sound Control (OSC), using a TDA MIDI device placed on the Biotron track (Derivative, 2026).

2.2.4 TouchDesigner

The TouchDesigner workflow receives MIDI note data from Ableton in real time through TDAbleton's abletonMIDI component. Incoming note values are processed through a series of channel operators (CHOPs) that scale and smooth the signal, controlling both the timing and spatial placement of the star graphic. Star geometry is instanced radially in response to note pitch, with lower notes placing stars toward the left side and higher notes toward the right. A lag and limit chain governs the appearance and decay rate of each instance. The final composite layer combines the painting backdrop, the star instances, and the shimmering effect described in Section 2.1.2, produced by feedback, blur, and lens distortion operators, into a continuous output to the installation screen.

3. Outcomes and Iterations

3.1 Pilot at New College of Florida (February 2026)

In February 2026, I showcased the result of my independent study with Tabatabaie at an arts event on campus at New College of Florida. The sound most prominently featured the bell-like tones assigned to Biotron’s signal. Somax2 ran live using the Experiment 1 corpus (Figure 7), with its output processed through pitch shifting and delay to sit as a background texture in the mix. This added a low, muted drone, which I interpreted as a metaphor for the Earth itself and its resonant frequency.

I was invited to give a brief introduction to the piece, after which a line formed to interact with the work. I observed a range of approaches, interaction styles, and reactions. Many people displayed facial expressions associated with delight and awe and shared their appreciation for plants unprompted. Audience questions ranged widely, from curiosity about the mechanism (“How does it work?” “How did you make this?”) to concern for the plant itself (“Is the plant okay with being touched?”). Others were drawn instead to the piece's practical or commercial value, asking about its applications or how it could be monetized.

Several attendees described the piece's effect as therapeutic, and one suggested, unprompted, that it might work well as a tool for autistic children, an application I had not considered and appreciated hearing. One professor asked about installing a version permanently in her

classroom. I also collected contacts from graduate programs and local arts organizations, suggesting the piece drew interest beyond the immediate campus arts community.

3.2 CCMSAI Video Submission (March 2026)

Between the pilot and March 2026, I developed the corpus iterations described in Section 2.2.2, arriving at the final half-step vocal corpus. That March, I created a performance video for *Co-Creativity in Music, Sound, and AI: Improvisation, Interaction, Composition* (CCMSAI), the flagship event of the EARS InterArts Lab at the University of California, Riverside, held June 5–6, 2026 (UCR Audiovisual Music, n.d.-a). The conference's focus on Somax2 and other machine-learning tools, and its interest in how creativity is shared between humans and collaborators of other forms, made it a natural home for this work. The video, accepted in April 2026, was the first iteration to use the final corpus in full, demonstrating how the plant, Somax2, and my voice respond to one another in real time (Figure 8; UCR Audiovisual Music, n.d.-b).



Figure 8. A still image from the CCMSAI conference video.

3.3 Ringling Underground (April 2026)

In April 2026, *Interspecial Signal* was selected for Ringling Underground, a showcase of work from regional colleges at the Ringling Museum of Art. This iteration used the full configuration, including the live Somax2 voice layer. Because the event featured live music in an open courtyard, I provided noise-cancelling headphones as the audio output. The unexpected result was that each visitor had an individual experience of the installation, in contrast to the pilot's more group-oriented one. I speculate that this individual experience deepened connection with the piece by removing competing sensory input and focusing attention on the interaction itself.

The piece ran for three hours, with an estimated 40 to 112 visitors interacting with it. I collected 40 email addresses, and interaction peaks in the MIDI data suggest as many as 112, though individual interactions were difficult to distinguish. Because I had assistance running the exhibit, I was free to observe from the sidelines and talk with participants. Visitors displayed facial expressions associated with awe, joy, and delight (Figure 9), and their reactions prompted at least a dozen conversations spanning their appreciation for plants and their personal connections to them. Several visitors were surprised to learn that their own bodies carry electrical activity too, and many brought friends over to try the installation. Few, however, took time to read the interpretive materials before interacting.



Figure 9. Three individuals interact with *Interspecial Signal* at Ringling Underground, Ringling Museum of Art, Sarasota, Florida, April 2026.

4. Discussion and Future Work

4.1 Artistic Discussion

Interspecial Signal sculpts a path through an embodied interaction sequence, and no two interactions are the same. Audiences approach a pothos plant set in front of a screen alight with a colorful radiating sun. When a certain proximity is reached, stars appear on the screen alongside music reminiscent of Mort Garson's *Mother Earth's Plantasia* (Garson, 1976) and Louis and Bebe Barron's electronic score for *Forbidden Planet* (Barron & Barron, 1956/1978).

The plant co-creator is alien to humans and alive, while Somax2 is the AI co-creator alien to humans and unalive. Both are conducted with the arc of an arm yet uncontrollable in the moment, a gesture without distinct command. Each has its own sensing and decision-making process, influenced by the other without coordination or communication. Bell-like sonic

textures duet with an invisible, cyborg-like vocalist that shadows the plant's note range. Because the Somax2 layer is built from a corpus of my own voice, the piece is a plant-machine-human hybrid: visitors are arguably not hearing the plant's signal alone, but a duet between the plant and a trained model of me. The layer's tendency toward self-continuation creates moments of eerie resonance, as though another being is genuinely attending to the plant as the interaction unfolds.

My AI co-creator, Somax2, and its corpus-based memory and tendencies produced an eeriness I did not know was essential to the metaphor until I heard it. Without it, I could instead have recorded myself singing each note of my range individually, sampled those recordings, and mapped them directly onto a MIDI keyboard triggered by Biotron's signal. But something essential would have been missing. The plant co-creator, my trusty pothos, responded differently based on the room, the light, and the day. Co-creation, I learned, does not require intention or consciousness. Each entity exerted influence on this work by its presence.

4.2 Audience Response and Limitations

The audience questions described in Section 3.1 offer useful evidence of how visitors related to the plant. Attendees who asked whether the plant was okay with being touched were already extending it a kind of moral consideration, while those asking about monetization engaged with it more as a novelty product than a living co-creator. This split is a fairly direct illustration of the plant awareness disparity described in Section 1.2.2.

The work also carries risks. First, it may encourage anthropomorphization of plants in pursuit of greater empathy. Visitors without a background in plant biology might conclude that the plant itself is making music. Though I offered a guided interpretive presentation to explain this distinction, few visitors engaged with it before interacting (Section 3.3). This risk cuts both ways, however: Balding and Williams (2016, as cited in Parsley, 2020) suggest that intentionally anthropomorphizing and empathizing with plants can increase interest in them and support for their conservation. Second, while environmental art often aims to shift pro-environmental behavior, this piece documents only the creation of an interactive opportunity and qualitative observations of reaction and attention. It lacks a mechanism to track behavior change after the interaction. This gap positions the work more as a thought-provoking art piece than as an educational tool.

The technical setup had limitations as well. Biotron's sensitivity tended to taper off over time, requiring several recalibrations as interaction accumulated (Section 2.2.1). More fundamentally, Playtronica categorizes Biotron as a music controller rather than an instrument for measuring or recording data, and its output can be affected by nearby electrical noise, the geometry of the plant and setup, and moisture (Playtronica, n.d.). The sounds visitors hear are therefore shaped by more than the plant's electrophysiology alone. Finally, the TouchDesigner workflow responded to MIDI note pitches with only moderate accuracy, falling short of my hope for a more inclusive sensory experience in which each note could be seen as clearly as it is heard.

4.3 Future Work

Several technical refinements could strengthen future iterations. A ramping mechanism could automatically adjust sensitivity to a visitor's rate of approach, rather than relying on a fixed threshold. Real-time instruments designed for accurate measurement, such as those used by Madariaga et al. (2024), could help distinguish the plant's electrophysiological data from the signal noise Playtronica describes. I would also like to develop a TouchDesigner visualization keyed more explicitly to the staged signaling response Aratani et al. (2023) documented in *Arabidopsis*. Rather than an abstract radial star pattern, this version would let the visual itself argue that plant signaling is a real, staged physiological process, not only a decorative metaphor.

For the installation arrangement, I would like to explore a living room iteration where the audience is invited to sit as if in a lounge, with the plant in one corner. The sensitivity would be set low enough to permit signals from the plant's inherent processes while still picking up human proximity, and the revised TouchDesigner visualization would play on a television. This arrangement would invite longer interactions, in hopes of amplifying the chances of a contemplative experience.

The experiments in this work will also be the foundation for my next installation, a return to my original waterfall concept. It will explore how sensory experiences of water might encourage a more peaceful mental state, as described in *Blue Mind* (Nichols, 2015).

5. Conclusion

If I were a plant, what signal would I want to send to the human species? If I were a waterfall, what would I have to say, understanding the complexities of human experience, and understanding how to mediate the message? I have walked around holding questions like these for years. *Interspecial Signal*, my first work of artistic research, began with a related question: can an experience inspire empathy for nature, and if so, how might that experience be shaped to do so?

The work suggests that combining the arts and sciences can open conversations about the natural world, even when an exhibit is only loosely grounded in scientific principle. I speculate that an embodied, interactive experience like this one invites more conversation than a static image or text on a wall. Working with Somax2, I also came to understand that co-creation does not require intention or consciousness.

That understanding sharpens a question I first asked while sampling that Virginian rhododendron in 2025: in a world where artistic co-creators earn royalties based on their contribution, what happens when that contributor is not a human but another entity? What if those royalties could generate income enough to preserve the land and environment they are on? What if a plant or a waterfall, in collaboration with a human, could make a hit record and secure its own ground?

Before this conference, I suspected questions like these were mostly idle wonderings. Through CCMSAI, I explored co-creation with two nonhuman partners, one natural and one artificial, neither of which intended anything, and the conference became the place where those ideas

came together. It showed me that academia, and opportunities like this one, have room for these questions, and that I can keep pursuing them in future research. This just goes to show the breadth of conversations that can be had when we start talking about the meaning of things: of words, of what makes an entity, of what makes intelligence, of how plant intelligence and artificial intelligence differ from and resemble our own. I intend to keep wondering, and less idly.

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