STATEMENT OF RESEARCH

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As a composer, I enable musical accessibility through aesthetic and technical abstraction. Rather than merely embellish a tradition of western classical music siloed within academia and high society, my artistic journey is instead guided by the desire to transcend boundaries, including those created by genre, instrumentation, and cultural barriers. This has inspired me to adapt “absolute” music principally concerned with elucidating the assumptions inherent to its own performance. In an era where technology is principally used to store, manipulate, and retrieve data in predictable ways, I instead utilize it to construct radically novel approaches to sound synthesis and organization.

I leverage aesthetic nonrepresentationalism in art to explore the inherent assumptions, problems, and biases of the medium. In order to facilitate critical discourse around creative practice, it is fundamental that we critique the frameworks of presentation themselves. In practice, this involves a synthesis of new modalities of artistic presentation with traditional techniques and approaches, empowering us to reconsider commonly uncontested assumptions through a novel organizational lens. My works often explore how traditional theoretical concepts apply to new technological contexts (*Projection Cube*, a serial work for generative electronics), or how traditional ensembles can be radically reorganized through algorithmic mediation (*Zero Gravity*, for string orchestra and generative video; *Freezing Tereré*, for brass quintet and audio-reactive video; *Automorphism*, for chamber trio and fixed video). This aesthetic abstraction is also essential to maximizing the accessibility of my works, facilitating exceptional flexibility within performance practice and experiential immersion and enabling portability throughout performance contexts and audiences.

I currently create context-responsive systems which transcend the closed nature of traditional performance practice. I regularly use generative video as a means to establishing this musical setting, both in my acoustic and electronic works. The role of video in my work is multifaceted, and often specific to the needs of the piece. In particular, the temporal ambiguity of the visual medium is what makes it useful as a tool for integrating works of sound art into a wider variety of performance contexts. Since visual forms can be interpreted in contrasting ways depending on the order in which various spatial parts and/or dimensions (such as color) are viewed, accompanying visuals can inspire the interpretation of sound in a wide variety of ways. This can make musical works more aesthetically adaptable to different speaker configurations, room acoustics, and even listeners (including a wider range of physical hearing and psychoacoustic dispositions). I investigate this idea directly in my generative fixed media audiovisual work *Collective Perception*, which leverages the unique seating and viewing position of each audience member as compositional inspiration, rather than a flaw to correct. Furthermore, the use of video graphic scores creates an intuitive paradigm for the rendition of generative pieces for acoustic instruments, an approach I have explored using both generative (*Zero Gravity*, *Freezing Tereré*) and fixed (*Automorphism*)

video with live performers. I also used a video component within my audience participation piece *Remote Access* as a way of guiding interactivity with a large number of concurrent performers, leveraging the discretion of the video medium for clearer feedback to participants sending infrared remote signals to the real-time audiovisual system.

Perhaps what I find most fascinating about video art is its robust relationship with dynamic computing paradigms, which has inspired me to innovate similar workflows within the sound domain. For a variety of technical, historical, and cultural reasons (of which I am also interested to further investigate), most approaches to audio programming are extremely fixed in nature, and are unscalable to multiple computers or even processing threads. Utilizing opportunities afforded by the widespread proliferation of high-performance parallel computing architectures as instruments for algorithmic composition is not only vital to understanding their musical possibilities, but is essential to critically assessing the implications of these technologies on society broadly. My DMA dissertation *Abstractions* is a critical first step in this process, exploring the role of scalable computing architectures within open-ended performance and playback systems. This piece also investigates scalability of input and output audio channels, relating closely to my work on open score composition within my current residency with the ASU Chamber winds and my previous work *Study for Strings*, an acoustic piece for any number and type of bowed string instruments. This area of study is an extension of my previous work with context-determined performing forces in *Remote Access*, which utilizes audience participation and any infrared remotes available.

Rather than viewing technology as a means to an end, I am interested in sonifying its intrinsic properties to explore the emerging phenomena of our increasingly interconnected digital world. These innovations to computational paradigms in media art will be of great use to the computer music community, as well as other disciplines seeking to utilize parallel and scalable architectures to analyze and generate sound, in addition to those looking to concurrently apply currently developed high-performance video rendering techniques to audio. As we enter a new era of networked computation, guided by a broad cultural and academic interest in artificial intelligence, this research will be vital to understanding the possibilities, limitations, and transformative effects of changing computational approaches.

In addition to offering unprecedented opportunity to explore artistic abstraction at an extremely direct level, the widespread proliferation of homogenized, modular, and networked computing paradigms are currently transforming all facets of contemporary society. It is urgently important to critically explore these technological advances through the lens of artistic expression to develop a cultural awareness of their implications, so that we may consciously and democratically shape our future existence. This direct investigation is only possible through the integrated view of arts and sciences positioned by my research agenda, which advances a synergistic development of creative practice with the algorithmic approaches necessary to facilitate it, rather than allowing works to be passively distorted by contemporary ‘culture’ or ‘technology’ when viewed extrinsically from one another.