

## Aumi-Futurism: The Elsewhere and "Elsewhen" of *(Un)Rolling the Boulder* and *Turning the Page*

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### **ABSTRACT**

This article discusses two performances that used the movement-to-music technology known as the "Adaptive Use Musical Instrument" or AUMI to allow differently-abled participants to collaborate with one another: *(Un)Rolling the Boulder: Improvising New Communities*, a multimedia, mixed-ability improvisation that was staged at the University of Kansas in October 2013 and *Turning the Page*, an interdisciplinary musical theatre piece premiered in Ottawa, Canada in April 2014. We theorize these performances as examples of "AUMI-Futurism", combining insights gleaned from two different sources: the Afrofuturist philosophy of composer, improviser, and bandleader Sun Ra, and the work of disability studies scholar Alison Kafer. This essay examines the collaborative, improvisatory processes that surrounded *(Un)Rolling the Boulder* and *Turning the Page*, focusing in particular on the role that the AUMI software played in imagining and performing new communities.

### **KEYWORDS**

Adaptive Use Musical Instrument (AUMI); afrofuturism; disability studies; community music; music and technology; improvisation

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## INTRODUCTION

The Adaptive Use Musical Instrument or AUMI is a free software application that turns any camera-equipped computer or iOS device into a flexible musical instrument in which movement triggers sound (available through <http://aumiapp.com>). AUMI can be altered to suit the needs of virtually anybody (or, more literally, any body). There are several differences between the computer and iOS versions of the AUMI software, but both use a front-facing video camera to track motion, providing in real time an on-screen video image of the camera's field of view and auditory feedback in the form of a variable set of movement-triggered sounds. The software's zoom function allows a user to focus on a person's entire body or on a specific body part. If, for example, a quadriplegic AUMI user has mobility from the neck up only, the instrument can be configured in such a way as to track the movement of the user's head or a specific point on the head. AUMI's graphical user interface can be customized in different ways, allowing users the option of changing the size, colour, and opacity of the software's circular cursor, and dividing the screen into a variable number of zones or "sound boxes" that can be resized and arranged horizontally, vertically, radially, or in a grid. The movements of the user will cause the cursor to pass over the sound boxes, each of which will trigger a different pitch or sound depending on the instrument specified by the user. In the case of pitched instruments (which include MIDI versions of western and non-western instruments such as piano, guitar, sitar, and a wide variety of other instruments), AUMI users can change the scale, the number of notes, and the tonal centre. A variety of non-pitched percussion sounds are available too.

Although the software can be used by anyone, to date it has been used most extensively in workshops and performances involving musicians with various forms of disability (Tucker *et al.*, 2016). By making musical improvisation and collaboration accessible to the widest possible range of individuals, including those with narrow ranges of mobility and/or little or no musical training, collaborative performances involving AUMI offer a rich site for exploring improvisation across difference. The benefits extend far beyond typical notions of disability accommodation, but actually challenge the lines that societies draw between ability and disability, something that disability rights activists and scholars in disability studies have long advocated for. A truly collaborative improvisation across difference—like a truly democratic society—cannot stem from a margin and center model in which "outsiders" are "welcomed" into a center defined by those who presume to already be "at home" (Ahmed, 2012, p. 43). As disability and performance scholars Carrie Sandahl and Philip Auslander have pointed out, people with disabilities already know a great deal about improvisation and performance as "lived experience" (2009, p. 2). This knowledge benefits the entire community's search for more responsive and flexible artistic, as well as community, practices.

Political scientist Susan Bickford writes that in any group, democratic listening requires that all listen and all are heard (Bickford, 1996, p. 2). Unlike most musical instruments that have certain kinds of body requirements in order for people to be

able play them (grasping, plucking, channelling air through a mouthpiece, etc.), the AUMI, with its goal to adapt to all bodies, facilitates improvisational music-making that is equally accessible to all players. In addition to providing auditory feedback, AUMI-equipped computers can be outfitted with haptic devices that enable Deaf/deaf and hearing impaired participants to perceive the sound signals that they send and receive through tactile vibrations. In facilitating musical improvisation among participants who may not otherwise encounter one another as co-collaborators, AUMI improvisation also has the potential to facilitate new kinds of community interaction in other areas of life, enabling new relationships, coalitions, and alliances, and developing new modes of community consciousness.

The authors of this article—Jesse Stewart, Sherrie Tucker, Pete Williams, and Kip Haaheim—have been using the Adaptive Use Musical Instrument in a variety of community music settings since 2012. Here, we address the AUMI’s usefulness for supporting performance collaborations that seek “equal exchanges” among improvisers with very different lived experiences (Sandahl and Auslander, 2009, p. 2). What does the use of this instrument, which is designed (and continually redesigned) to adapt to every body, contribute to Sandahl and Auslander’s question about what mixed-ability performances “reveal about who is on the inside of disability culture and who is on the outside?” (p. 2). How can performance-based AUMI research be one of the “collaborative strategies” that disabled and nondisabled artists can use “to bridge the gap between their experiences?” (p. 2). What insights might mixed-ability AUMI improvisation yield about community practices in which people with many kinds of abilities and disabilities performatively imagine (and imaginatively perform) together a way of being that is responsive to everyone? And, finally, how might such performances affect future interactions among improvisers and audiences, not only in musical performance, but also in other areas of lived experience?

### WHY AUMI-FUTURISM?

The four authors of this paper have come to think of our performance-based research practices of mixed-ability AUMI improvisation as “AUMI-Futurism”, drawing inspiration from Afrofuturism, a radical alternative reality practice of several generations of visionary Black artists, including Sun Ra, George Clinton and Janelle Monae. Afrofuturist artists, musicians, and writers have harnessed myth, science, technology, and science fiction to imagine new worlds that, unlike so many of the state, economic, and social systems in the world today, care about and support Black people. Many non-African American artists have adopted Afrofuturist practices, though care must be taken when drawing the line between stylistic influence and the political work of radical reimagination. For example, Catherine S. Ramírez has persuasively analyzed Chicanafuturism as a practice that “explores the ways that new and everyday technologies, including their detritus, transform Mexican American life and culture. It questions the promises of science, technology, and humanism for Chicanas, Chicanos, and other people of color. And like Afrofuturism, which reflects diasporic experience, Chicana futurism articulates colonial and postcolonial histories of *indigenismo*, *mestizaje*, hegemony, and survival” (Ramírez, 2008, p. 187). People with disabilities span all races and cultures, and have experienced many historically

complex relationships to science, technology, and humanism as sources of exclusion, inclusion, and sometimes as routes for radical reimaginings of more inclusive futures.

AUMI-Futurism is our conceptualization of how mixed-ability performance--using a technology that resonates with all bodies of the community--contributes to collaborative mixed-ability imaginings of new futures in which bodies of all abilities come into contact with one another and seek mutually beneficial connections. To imagine more communal futures is a political act (Kelley, 2003, p. 3). This paper is a call for AUMI-Futurist approaches to AUMI performance, approaches that take creative improvisation as a process of community formation, one that envisions new futures for performers and audiences. We want to advocate for more AUMI performances that respond to all participants across differences of mobility, neurology, cognition, sensory perception, pain, trauma, illness, and all of the other kinds of embodied lived difference and perspectives brought by the performers. Performance as research is, among other things, an embodied exploration of possibility that not only reflects the societies in which it takes place, but also tries out alternatives that may indeed affect the way that performers and audiences think, feel, and act. AUMI is not the only technology used in this fashion to promote mixed ability performance, but we believe that its expansive articulation of accessibility (it is free, portable, and easy to learn), improvisation (even the technological design is continually adapted to meet requirements of users), and research (all users are researchers) warrants specific study of AUMI performance.

The present essay examines two such examples of performance as research: *(Un)Rolling the Boulder: Improvising New Communities*, a multimedia mixed-ability improvisation that was staged at the University of Kansas in October 2013 and *Turning the Page*, an interdisciplinary musical theatre piece premiered in Ottawa, Canada in April 2014. We revisit these past performances through the insights of two very different theorists of radical futures. One is the visionary Afrofuturist philosopher, composer, improviser, and bandleader Sun Ra (born Herman Blount, 1914-1993) who claimed to be from Saturn for much of his career. Scholarly opinion is mixed as to the extent to which Ra actually *believed* that he was from Saturn, or whether his claim was a creative way of refusing to acknowledge the unacceptable state of racial inequalities of the United States in the mid-20<sup>th</sup> century; but most agree that his commitment to space origins throughout the majority of his adult life constituted a powerful philosophical refusal of an unacceptable world and a vision of a better one (Szwed, 1997, p. 137), a vision that Ra referred to as an “alter-destiny” in the 1974 Afrofuturist science fiction film *Space is the Place*. To connect Sun Ra’s brand of Afrofuturism with the radical reimaginings of better futures found in disability studies, we draw on the work of feminist, queer, crip theorist, Alison Kafer, for whom a vision of a more egalitarian future is not one in which disability no longer exists, but one that includes people with disabilities among its architects. We find both Ra and Kafer helpful in critically examining the collaborative, improvisatory processes that surrounded *(Un)Rolling the Boulder* and *Turning the Page*, as we focus in particular on the role of the AUMI software as a facilitator for imagining and performing new communities and new futures.

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Sun Ra's relevance for AUMI-Futurism resides in his radical rejection of earthly paradigms that presented no future for him and the other "aliens" and/or "angels" around him. He rejected the word "human" due to humanism's historical habits of excluding Black people; as Ra put it, "the potential of humanity ... doesn't leave much space for what I want to do" (Szwed, 1997, p. 138). He often spoke of his rejection of earthly origins in similar terms. Puzzled by the cruelty he saw on earth, writes George Lipsitz, Ra decided that he "'might have come from somewhere else.' He claimed that somewhere else 'was outer space, perhaps Saturn'" (2007, p. 104).

*Perhaps Saturn*—this was more than a bewildered expression of ennui for Herman Blount in his search for his place in the world; they were words that he lived by as a philosopher-musician. This message resonated--and continues to resonate--for many people who appreciate his space music, space philosophies, space performances, space fashion, and, most important to the context of this paper, space perspectives on the limitations of earth culture. While whimsy has certainly been part of Ra's appeal, it is important to acknowledge that throughout his time on earth, his message about space, performance, and imagination was pitched as urgent: novelty was not the point; the destination was survival. Linking Ra's space travel to race-based restrictions here on earth, Robin D.G. Kelley notes: "Critical of racism in America and elsewhere, [Ra] promoted a kind of interplanetary emigrationist movement" (2003, p. 31). Many scholars have written extensively about Jim Crow racism as a key factor in Ra's rejection of the ways that lines were drawn between mobility and confinement, agency and subjugation, liveable and unliveable lives—lines more clearly grasped and undone from astral vantage points (Gaines, 2004, p. 214; Lock, 1999, pp. 57-64; Szwed, 1997, pp. 136-137). "If we came from nowhere here / Why can't we go somewhere there?" Ra asked in his piece "Imagination" (Szwed, 1997, p. 141). In another piece, he wrote, "Somebody else's idea of things to come / Need not be the only way to vision the future" (Lock, 1999, p. 60).

John Szwed's book *Space is the Place: The Lives and Times of Sun Ra* attends to Ra's experiences with disability as another social factor in his rejection of earthly parameters. His Jim Crow adolescence—a dangerous time for any African American boy or girl growing up in Depression-era Alabama—was exacerbated by health impairments (a serious hernia and the onset of cryptorchidism, a condition by which one or both testicles do not drop) and by the ableist culture that not only discriminated against people with disabilities, but also spectacularized physical difference. Szwed tells us that, as Herman Blount, Ra lived in fear that his organs might fall from his body, or shift in dangerous ways, or that he might be discovered and incur unbearable consequences, such as winding up like the folks he saw displayed in traveling "freak shows" throughout his childhood (1997, p. 10). His inability to perform certain kinds of labour threatened to, and sometimes did, affect his work life. Ra's rejection of the ways that social lines were drawn on earth spanned many fields of power in which bodies were categorized as normal/Other, valuable/worthless, integral/extraneous. We are not suggesting that his disability caused Sun Ra's space explorations, but we are suggesting that his experiential



knowledge of how society drew the lines of ability and disability had something to do with his long, extraordinary, and enduring trip.

Although Sun Ra did not explicitly address lines of ability/disability in his space music or philosophy, his diagnosis of social systems as disabling for many people's existence is compatible with that of many scholars in disability studies. In her book *Feminist Queer Crip*, Alison Kafer imagines a "somewhere" that is a radical remove from the places she has been. The "nowhere here" she must reject is one that inserts itself every time that people with disabilities are absent from visions of better futures, ostensibly because they have all been "cured" of the afflictions that account for their difference (2013, p. 3). While defending the integrity of people of all abilities to seek improved health and well-being, she rejects a political vision of a future without disability, however well-intended, as not so different from the segregation all-too-commonly imposed upon people with disabilities in societies and cultures of the present (2013, p. 4). A future erected on the premise that people with disabilities and their critical insights are no longer present is a failure of utopian imagination, a "nowhere" that Kafer encounters everywhere, even in intentionally inclusive, egalitarian communities. Her "somewhere there" isn't Saturn, but it also isn't *not* Saturn in the sense that we understand it. *Feminist Queer Crip* is a search for a spatially and temporally different mode of "imagining more accessible futures," which she describes as "yearning for an elsewhere—and, perhaps, an 'elsewhen'—in which disability is understood ... as political, as valuable, as integral" (2013, p. 3).

Only with the critical input of people with disabilities at the center of social justice activism can such an "elsewhere" and "elsewhen" be fathomed. People with disabilities need to be in that space and time of working for change, not just "included" as beneficiaries of largess or providers of diversity (Ahmed, 2012, p. 49), but as architects. The Adaptive Use Musical Instrument facilitates such a space. By sonically responding to every player's body, its use in mixed-ability group improvisation allows us to perform an elsewhere and an elsewhen, a space and time that not only includes, but actively celebrates--as political, valuable, and integral--the widest possible spectrum of abilities, articulating what Alex Lubet calls "universal musicality" (2011, p. 99). This is what we mean by AUMI-Futurism.

## AUMI CONSORTIUM

Before discussing the AUMI-Futurist performances with which we were involved, it is important to situate our own work within the much broader community of AUMI researchers and practitioners of which we are a part. We, the four authors of this article, are participants in two of the six research sites of the AUMI Research Consortium, an interdisciplinary collaboration of scholars, artists, technologists, composers, improvisers, programmers, and occupational therapists engaged in practice-based research involving the AUMI. The research sites grew out of the Deep Listening Institute (DLI), where composer, improviser, humanitarian, and electronic music pioneer, Pauline Oliveros (1932-2016) and an interdisciplinary team of research associates developed the prototype for the instrument in 2007 (Pask, 2010). Although Oliveros did not claim to be from Saturn, she often invoked space travel as

a way to envision better futures. She claimed as one of her earliest sonic influences, Wilma Deering, not a pioneering composer, but co-pilot to Buck Rogers in the popular sci-fi radio series of the 1930s (Smith, 2012, para. 1). Oliveros's life-long practice of "expanding the improvising community" through art and science, technology and listening, is rocket-fuelled with dreaming of radically inclusive alternative futures. Indeed, for Oliveros, the goal of the AUMI was never just to create an accessible instrument, but to transform social relations and develop new kinds of community interactions and new music (Oliveros *et al.*, 2011; Pask, 2010; Tucker *et al.*, 2016).

In 2009, Oliveros brought the AUMI project to the Improvisation, Community, and Social Practice (ICASP) research project, where it became one of the most active research areas precisely because of its potential for contributing new practices and insights into improvisation and community (see <http://www.improvcommunity.ca/>). It now comprises an important project within the International Institute for Critical Studies in Improvisation (see <http://improvisationinstitute.ca/>). When Oliveros dissolved the Deep Listening Institute as a non-profit organization in 2014, many DLI projects migrated to the new Center for Deep Listening at Rensselaer Polytechnic Institute (RPI) where she was a Distinguished Research Professor of Music. The AUMI project also moved to RPI, to the Center for Cognition, Communication, and Culture (CCC) (see <http://ccc-rpi.org/research/aumi/>), which is directed by acoustician, musician, and sound artist Jonas Braasch. In addition to AUMI-CCC, the AUMI Research Consortium includes research sites at the University of Kansas in Lawrence, Kansas in the United States; and, in Canada, at Memorial University in St. John's, Newfoundland; McGill University in Montreal, Quebec; Ontario College of Art and Design in Toronto, Ontario; and Carleton University in Ottawa, Ontario.

Research approaches and methods among the consortia members are practice-based, multidisciplinary, and improvisation-focused, while varying from site to site. These range from Ellen Waterman's team bringing together medical ethnomusicology and music therapy in St. John's (Waterman *et al.* 2016) to Eric Lewis and Keiko Shikako Thomas's collaboration across occupational therapy, electronic music, and pedagogy in Montreal. The consortia members at AUMI-Carleton (Ottawa, Ontario) and AUMI-KU InterArts (Lawrence, Kansas) have focused primarily on AUMI mixed-ability performance as arts-based community-formation. The authors of this article speak from our own experiences, which are informed by larger research communities at our particular consortia homes: Jesse Stewart from AUMI-Carleton; and Sherrie Tucker, Kip Haaheim, and Pete Williams as three of many members of AUMI-KU InterArts, which also includes core members Nicole Hodges Persley, Michelle Heffner Hayes and Abbey Dvorak, and an ever-expanding community of affiliated researchers and partners (<https://aumi.ku.edu>).

Although there was a long-standing precedent to study AUMI improvisation in relation to new community formation and critical practices, the four authors of this article did not initially think of the AUMI performances that we had been involved in as radical reimagining of the future. This insight came when the call-for-papers

for the 2014 Guelph Jazz Festival Colloquium announced the theme of “Sounding Futures”, challenging participants to engage Sun Ra’s writings and music in order to ask: “What does your future sound like?” Our AUMI performances *had* sounded and looked like futures we would like to see and we welcomed the opportunity to explore this idea, and to call it “AUMI-Futurism” (see <http://www.improvcommunity.ca/content/guelph-jazz-festival-colloquium-2014>).

The more we talked about it, the more we came to think of AUMI-Futurism as a fruitful approach to AUMI performance, and to seriously consider how our performances had helped us and our fellow improvisers to envision better futures together. This article continues our dialogue beyond the colloquium as we explore our own uses of, and hopes for, the AUMI in relation to Ra’s Afrofuturist visions for improvising more inclusive futures, and Kafer’s insistence that such radical reimaginings must incorporate the bodies and insights of people with disabilities.

If a meeting between a band-leader from Saturn and the professor of feminist studies from Southwestern University seems an unwieldy detour, we argue that this excursion is well worth the trip in routing us toward an area of academic inquiry and imagination that would benefit from busier traffic: the place of disability in improvising communities. If we take seriously Alex Lubet’s proposal for an “ethnomusicology of disability”, we must pose the question: Where does any given musical culture draw the line between ability and disability? This we must *continually* ask, not only of the musical cultures that we do not identify with or wish to replicate, but also of the musical cultures that comprise our current practices and future imaginings (Lubet, 2004, p. 134-137; Lubet, 2011, p. 30).

We turn now to our own nuts-and-bolts accounts, situated memories, and AUMI-Futurist reflections on two specific AUMI-facilitated community performances: “(Un)Rolling the Boulder: Improvising New Communities” and “Turning the Page”.

### **FROM FOUR REHEARSALS TO “(UN)ROLLING THE BOULDER”: FREEDOM, DISCIPLINE, AND RESPONSIBILITY**

Before “(Un)Rolling the Boulder: Improvising New Communities” acquired its ambitiously (anti-)Sisyphian name, it began as a humble call for participants: “Four Rehearsals and a Performance: No Experience Necessary!” This open community call was AUMI-KU InterArts’s attempt to use the AUMI as an improvisational tool for mixed-ability community performance. The title, like other aspects of the performance, came from group improvisation. In discussing themes that the ensemble wanted to explore, one participant said, “Sometimes having a disability feels like pushing a big boulder”. Another participant added, “Sometimes people are the boulder”. The boulder became a generative image, or what Petra Kupperts calls, following Joseph Roach, “a myth, to be retold, offer[ing] us a process of community communication. By destabilizing the founding meaning”, Kupperts continues, “we fight for entry into the realm where new meaning can be founded” that “can allow new community to come into being, in being-together, and in joint exploration” (Kupperts, 2015, p. 110). *(Un)rolling the Boulder* was a myth that affected us all in



different ways, and it became an effective performance goal for our improvisatory new community.

The impulse for AUMI-KU InterArts to engage in community performance followed on the heels of a series of different kinds of activities. We, along with Heffner Hayes, Hodges Persley, Ray Mizumura-Pence, and other “early adopters” of AUMI in Kansas had conducted workshops, demonstrations, lectures, classroom visits, and even a flash mob, in our efforts to explore the potential of this instrument to transform social-musical relations. Our small group had grown from hallway conversations to a network of interested faculty and students and community members involved in organizations geared toward people with disabilities. A collaborative research grant made it possible to bring trainers from the Deep Listening Institute to Kansas, which we hoped would generate mixed-ability improvising communities interested in working with us to explore the implications of improvising across abilities. These and subsequent “how-to” sessions always sparked interest and downloads of the AUMI software, but our inability to know how people used it later prevented us from exploring AUMI’s potential for improvising new social relations across differences in mobility, cognitive processing, and sensory perception.

The possibilities of exploring AUMI-assisted “alter-destinies”, as we would later come to see them, were stymied by a scarcity of time and space for busy people, many of whom experienced daily battles for accessible buildings, transportation, and information. We needed a different arrangement of time and space, something akin to Sun Ra’s “somewhere there”, or Alison Kafer’s “elsewhere” and “elsewhen”. The process of collaboratively creating and staging a performance modelled an alternate conception of time and space. Although the initial plan to “do a show” was logistics-driven, the performance yielded additional benefits that we had not accessed through workshops and demonstrations. Improvising together toward public performance multiplies the implications of time and space. Present-focused rehearsals also pointed us toward a shared future in which we would share our co-created improvisatory community with others.

The AUMI-KU InterArts group counts among its members an improvisational director and performer in the Theatre Department, Nicole Hodges Persley, who offered to direct a collaboratively-devised improvisation based on an open call and a small number of rehearsals. Michelle Heffner Hayes, a scholar and practitioner of dance improvisation, would choreograph, working with participants to develop an improvisational movement vocabulary. Kip Haaheim would solicit sound recordings from the performers and upload them into the AUMI sound files. The idea of co-developing and staging a mixed-abilities performance excited us, but it was with much uncertainty that we issued our call for participants.

To our surprise and delight, seventeen people gathered at our first rehearsal. From our campus at the University of Kansas, we drew 6 faculty from 5 departments, 5 graduate and undergraduate students from 4 departments, a research associate, and an administrator. Four participants were KU alumni. Community participants

included Ranita Wilks, youth employment coordinator at Independence Inc., the local independent living resource center, and JoAnne Fluke, the founder of a wheelchair dance company in Kansas City. At the first rehearsal, Nicole explained that there was no script. We would demonstrate the AUMI, and work with it as a starting point, but the community would create the performance using whatever other instruments or techniques that they wanted. Everyone who came to all the rehearsals was in the community and in the performance. Nicole would observe what we did, circulate rehearsal notes via email, and help us to identify performance elements as they unfolded. We had several AUMI stations set up on tables, but these could be easily moved. The open room was available to be used in whatever way the ensemble chose. Two things were clear by the end of the first evening: the performers did not want the audience to know who was in the performance and who wasn't, and everyone wanted the process documented. For this ensemble, disrupting the insider/outsider expectations of spectators/performers, and maintaining a record of how we did it, was of political importance for the performance and beyond.

All seventeen participants returned for the second rehearsal; already, it was apparent that the performers felt a significant investment in the project. We began with discussion of what we had liked about the last rehearsal and what we wanted to work on in the next one. The AUMI continued to be important as a musical instrument, but it also became a driving philosophy of the rehearsals: whatever we did needed to be responsive to all of our bodies. In this way, we were inspired by the AUMI to encourage and incorporate other adaptive performance practices. For example, it turned out that JoAnne Fluke was an instructor of wheelchair "Zumba", a form of aerobic dance fitness that she had adapted for people with disabilities. She led us in an impromptu Zumba routine, calling out substitute movements for those of us who were without wheelchairs. The incorporation of Zumba significantly altered the musical component of the performance seeing as Zumba is normally accompanied by pre-recorded popular dance music. This was challenging for those of us who were primarily interested in free improvisation. (Tucker 2015). However, JoAnne's instruction had a cohesive effect on the ensemble, so the project's initial choreographer, Michelle Heffner Hayes, worked with JoAnne to integrate our respective improvisatory vocabularies (both sonic and kinetic) with those associated with adaptive Zumba.

*(Un)Rolling the Boulder* developed out of a process of improvisatory dialogue concerning how to integrate AUMI with Zumba and all of the other elements that individual group members brought to the project. For example, each participant suggested sounds that they wanted to include in the performance. We then recorded those sounds and imported them into AUMI so that the performers could trigger them during the course of the performance using the AUMI video-tracking interface. Some sound elements were collected by ensemble members on cell phones and recorders and emailed to Kip Haaheim as mp3 files. Others were recorded at an early rehearsal, when ensemble members recited words and phrases, including activist chants and readings of quotes that were meaningful to participants. For example, one participant contributed a favourite quote from genderqueer disability activist Eli

Clare: “here’s to joy and resistance”; another chose this question: “if we are only spiritual beings why do we have bodies?” One participant led several others in chants she remembered doing at a March on Washington for disability rights.

The process of coming up with the sounds to be triggered by the AUMI brought meaning and purpose to rehearsals and performance. This was true not only of the spoken phrases we recorded, but also the collection of environmental sounds that carried a special meaning in certain communities (such as the beeping of a crosswalk sign to inform a non-seeing person when it is safe to cross an intersection, or the sound of an electric door opener). By re-contextualizing these sounds within the performance, we drew critical attention to the relationships between bodies of difference and the soundscapes through which we move on a daily basis, while also creating an elsewhere and an elsewhen in which those relationships were reimagined and reconfigured through our improvisatory actions.

When improvising with the AUMI, the relationship between bodily gesture and auditory response does not always feel like a unidirectional flow in which a particular gesture reliably triggers a particular sound (like playing a string instrument, for example). There is a degree of indeterminacy in the relationship between gesture and sound owing to current limitations in the movement-tracking accuracy of computer web cameras. In some contexts this provides an added level of interest and in others it is a liability. For example, some of the musically-trained participants wanted to include an arrangement of the opening theme from the second movement of Beethoven’s *Symphony No. 7*. We tried to program the AUMI to have a timpani sound with two different pitches so that any of the *(Un)Rolling* performers would have been able to play along with the symphony. But we found that we were not able to elicit a response from the AUMI with enough precision to get the desired effect, so we ended up abandoning the idea. However, in most cases the unexpected sounds and silences introduced into the performance by our interactions with the AUMI provided additional opportunities for performers to improvise. Participatory imprecision is valued in many musical cultures as being conducive for creating new and necessary social relations. Caleb Lázaro-Moreno suggests that the imprecision of AUMI control contributes to powerful reconfigurations of community interaction, and calls for more study of how AUMI improvisation may learn from earlier aesthetics of discrepancy such those found in Afro-Cuban *timba*. (Lázaro-Moreno 2017).

*(Un)Rolling the Boulder* was not about total improvisatory freedom—a completely open time and space when and where we got to do whatever we wanted—but about discipline: discipline that provides a basis for openness, exploration, interaction, and community formation. In order to improvise with others in this emergent community, we all had to change our habits of mind and body and develop new ones in dialogue with our co-performers.

The interplay between freedom and discipline informed much of Sun Ra’s work and philosophy. He composed music that combined group free improvisation, sonic experimentation, intricate composed melodies and rhythms, as well as simple, sing-

along chants and riffs. He also enforced strict discipline off the bandstand, requiring his band members to live together in a communal home where they were expected to abstain from drugs, drinking, sex, and eating meat. For Ra, discipline “ought to permit people to find the most natural things. Without the base, total freedom is impossible. Everything needs roots” (Ra, 1973, cited in Szwed, 1997, p. 115). In this view, discipline is a path to freedom, a prior condition or preparation that grounds and enables exploration.

Similarly, dance scholar Danielle Goldman suggests we look at improvisation not as a process of escaping the constraints of everyday life, but of coming to understand those constraints and then figuring out how to spontaneously, creatively, and skilfully move within them in a “practice of freedom” (Goldman, 2010, p. 4). In other words, improvisatory freedom involves preparing through discipline in order to be ready to move in the moment. This preparation, manifested through spontaneous movement, is one of the things that makes improvised performances compelling to both performers and audiences. Perhaps the capacity of improvised and flexible movement to create excitement is what Sun Ra had in mind when he said: “One is likely to generate fire when playing because you got to be spontaneous. In fact, like a spontaneous combustion on a psychic plane. If you don’t have the kind of body that is adjustable, of course it may happen. . . . Anything can happen. [But] we’re in the age where you have to adjust. There’s no holding back” (Ra 10). Although we can’t be sure what Ra meant by “the kind of body that is adjustable” or “a spontaneous combustion on a psychic plane”, he seems to suggest something similar to the concepts of freedom, discipline, and improvisation that Goldman elucidates and that the AUMI is capable of facilitating: the process of preparing one’s body through discipline in order to be flexible enough to improvise in any situation.

We all operate within myriad physical and societal constraints that valorize normative body types, shapes, and movements. Such constraints are reproduced not only through entrenched performance practices and genre expectations, but also through the choreography of everyday life. All bodies have limits. But when cultures draw lines between ability and disability, they tend to distinguish “normal” bodies from limited bodies. Extending from this logic, a body with non-normatively limited motor control/mobility may not seem like a flexible, adjustable body. But such a view is informed by normative ways of looking at movement, ability, and creative expression that often associate large gestures with a broad range of emotion and greater freedom of expression. The Adaptive Use Musical Instrument makes it clear that almost everyone has an adjustable body and can learn how to move spontaneously, to “generate fire” as Ra puts it. Bodies that are often marginalized by ableism as rigid, inflexible, and non-expressive, are expressive and flexible when using adaptive technologies such as the AUMI. And bodies that are both seen as ‘normal’ and normalized by ableist discourse must find new ways to be expressive and flexible when using technology that does not privilege their embodied experience over other kinds of bodies. Improvising with the AUMI draws attention to the unique movements of a vast range of bodies and the sounds they elicit. Through discipline, bodies discover their own constraints and practice freedom within them.

In addition to the concepts of discipline and freedom, the idea of responsibility came to occupy a central place in our thoughts as we prepared for *(Un)Rolling the Boulder*. In any collaborative performance, there are multiple forms of responsibility: responsibility to one's self, to our own artistic ideas and ideals; responsibility to the music and our role(s) in creating it; responsibility to the other musicians involved; responsibility to the audience; and responsibility to the musical traditions and histories that inform our musical practices, even as we work to extend them. Negotiating and balancing all of these responsibilities was one of the most challenging--and rewarding--things about the process of creating *(Un)Rolling the Boulder*. What role, we asked, does responsibility play in process(es) of improvised musical and kinaesthetic co-creation and how are our responsibilities complicated when we collaborate across various forms of difference? We learned that many of the challenges we faced in co-creating this performance were perceptible to us only because we had agreed that everyone in the community needed to shape what happened. Responsibility and accessibility, like community, aren't monolithic or fixed. Rather, they are in a constant state of flux and negotiation. The range of sonic materials and styles invoked in *(Un)Rolling the Boulder* ranged widely in timbre, pitch, tempo, and volume: from the bass-heavy dance club music with drum machines used in the Zumba sections, to a slowed-down sample of a music box that started off low, but was layered with samples of children laughing on a playground, the spoken-word recordings we made of ourselves, the firm, low voice of the crosswalk sign saying, "Wait. Wait. Wait", growing in density, as AUMI players swayed in front of laptops. Sound is perceived differently by different bodies, so aesthetic choices were not just about preferences, but access. When a hearing impaired participant wanted to increase the volume so that she could feel the vibration more clearly and a sound-sensitive participant needed the volume to be lowered, the question was not a private one about who should be accommodated, but a community performance question that we collaboratively worked to figure out in discussion, spatial practice, movement, and sound.

Preparing for a public performance seemed to deepen our investment in the project both individually and collectively, giving us a common goal to work towards. The higher stakes of performance included the prospect of an audience that would behold whatever alter-destiny the mixed-ability ensemble would collaboratively create. At the end of our public performance, the audience lingered for a much longer time than the duration of the program (which was only 20 minutes), to share in a dialogue with the performers. Many expressed a longing for something like this to happen again, and for more opportunities to be a part of mixed-ability musical and dance performance.

Looking back at the performance, we felt that it facilitated something more than the preparation and execution of a show; it provided a temporal and spatial window for something akin to Ra's "futuristic thinking" that could replace unsustainable earthly patterns of cruelty and exclusion (Szwed, 1997, p. 10). *(Un)Rolling the Boulder* responded to Kafer's call for "alternate temporalities that do not cast disabled people out of time, as the sign of the future of no future", positing instead a collaboratively



imagined future defined and demanded by people with disabilities (Kafer, 2013, pp. 34, 169). The experience had profound effects on many of the participants, which were documented by two graduate students who had been involved in the project and who conducted an oral history project with participants at various stages of the before and after the performance (Lair and Mog, n.d.; Lair and Mog, 2016). Subsequent events inspired by *(Un)Rolling the Boulder* included the first ever mixed-ability dance held at University of Kansas, and an ongoing monthly AUMI jam session at the Lawrence Public Library (Lázaro-Moreno 2017; Dvorak and Tucker 2017; AUMI-KU InterArts <https://aumi.ku.edu>). Through these endeavours, we are continuing to unroll—and chip away at—the boulders of inaccessibility and misunderstanding that so often surround disability, as we work collectively towards a better, more inclusive future.

### **“TURNING THE PAGE” ON DISABILITY AND THE ARTS**

At roughly the same time that preparations were taking place in Kansas for *(Un)Rolling the Boulder*, a year-long collaboration was underway in Ottawa, Canada between composer/percussionist Jesse Stewart and H'Art of Ottawa, an organization that facilitates art making among adults with intellectual disabilities. The collaboration culminated in a multi-media performance titled "Turning the Page" that featured projected images of paintings by H'Art of Ottawa artists and a live improvised soundtrack performed by all forty artists and Stewart.

From the very beginning, the idea was to make the project as collaborative as possible. We didn't have any preconceived ideas about the form that our performance would ultimately take. Rather, we agreed that we would make improvised music together on a weekly basis and seeing what emerged from the collaborative process. In *Improvisation as Art*, Edgar Landgraf describes improvisation as "an iterative and recursively operating process where dynamic structures emerge from the processing and reprocessing of elements. ... the term 'emergence' describes the arrival of something qualitatively new that was neither predictable, nor planned" (Landgraf, 2014, p. 36). In this view, all improvisatory encounters involve the staging of a particular set of constraints that encourage the emergence of something unforeseen. In a way, the *Turning the Page* performance emerged from a year-long improvisation.

Throughout the collaborative rehearsal process, we explored the sound of a wide variety of percussion instruments (shakers, drums, waterphones, gongs, etc.) and repurposed found objects. The artists were intrigued by the idea of musical found objects because they had used found objects in their work as visual artists (in collages and sculptural assemblages). We bridged the use of found objects in the visual and sonic arts by using paint brushes as mallets on the side of cardboard boxes, something that all of the participants enjoyed. In addition, we explored a variety of higher tech electronic instruments including the Adaptive Use Musical Instrument (AUMI) and an instrument known as the "reactable" a virtual modular synthesizer and digital sampler in the form of an interactive illuminated table. By placing and manipulating blocks on the reactable table top, performers can control different parameters of pre-recorded sounds in an intuitive way.

We decided to call the project *Turning the Page* because we felt as though we were turning the page, metaphorically speaking, on some of the ways in which art and music by people with disabilities have been framed historically by dominant discourses surrounding contemporary cultural production including many of those associated with so-called "outsider art". All too often, outsider status is applied by people in positions of authority who claim to have discovered the work of marginalized artists, and then benefit from the promotion, exhibition, performance, and publication of their work without much in the way of input from, or benefit to, the artists. This sort of exploitative practice is something we very much wanted to avoid.

*Turning the Page* was performed in Ottawa for a capacity audience at the National Arts Centre 4th Stage on April 30, 2014 (see video examples 1, 2, and 3 for excerpts from the premiere of the work).



Video excerpt 1 <<http://hdl.handle.net/10871/30856>>



Video excerpt 2 <<http://hdl.handle.net/10871/30855>>



*Video excerpt 3* <<http://hdl.handle.net/10871/30857>>

Within the performance, we enacted the idea of “turning the page” by handing out pieces of paper to all of the performers and audience members. The following words were printed on one side of the page along with an instruction for everyone to read the words out loud, preferably not in unison: “We are all artists. We are all musicians. We are turning the page on disability and the arts. We invite you to turn the page with us”. At the bottom of the score are the words “Turn the Page”. So the audience literally turned the page with the performers in a symbolic affirmation of our attempt to turn the page on received ideas about disability and the arts. On the back of each piece of paper was a list of instructions of ways that the piece of paper could be used to generate sound:

- Shake this piece of paper while holding it by one corner, varying the intensity of the shaking.
- Fold this piece of paper in half. Rub the two pieces of paper together, exploring patterned and unpatterned sounds.
- Tear this piece of paper into one continuous spiral.
- Fold this piece of paper in half. Place any of the three open edges between your lips and blow into the paper, causing it to act like a reed. Use long and short breath lengths, trying to vary the pitch of the resulting sounds.
- Holding the diagonal corners of this piece of paper, create percussive snapping sounds by quickly pulling the corners away from each other. Explore patterned and/or unpatterned sounds.

The performance began with all 40 performers and all 180 audience-members making music together in this way, putting us all on the same page so to speak.

From there, we went on to explore the sound of cardboard boxes, percussion instruments including drums, shakers, rattles, and gongs; as well as AUMI-equipped iPads and. We used the reactable to incorporate recordings of the artists that we made prior to the performance in which they discussed their creative practice and what art

means to them. This was a low-stress way of incorporating everyone's voice into the piece; instead of having the pressure of speaking in front of an audience, all the artists had to do was place blocks on to the reactable surface, which enabled them to weave their voices together in an affirmation of the dialogic spirit that animated the piece.

The AUMI software also occupied a central place in the performance. We used four AUMI-equipped iPads, which were positioned across the front of the stage. Several of the performers had a background in dance in addition to their background in the visual arts. The AUMI enabled us to incorporate a dance component into *Turning the Page* in a way that inverted the traditional relationship between dance and music: instead of the body responding to music, the movements of the improvising body caused the sounds, orchestrating the music. One thing that became clear early on in our weekly sessions was that each person who interacted with the AUMI software had to have a dedicated sound source so they could clearly discern the sounds that their own movements were generating from those of their co-performers. We found that if all the sound was channelled through a central sound system, it became difficult to tell who was making what sound. Therefore, each AUMI performer needed to have his or her own monitor. We accomplished this in the *Turning the Page* performance by positioning four Bose L1 speakers directly behind each of the AUMI performers. The sound from those speakers was loud enough for each performer to clearly hear the woodblock and sitar samples that they were adding to the sonic mix and also loud enough to fill the room and blend with the in-house sound system that amplified all of the other instruments in the performance.

Several unexpected things emerged from the year-long collaborative process that led to the *Turning the Page* performance. For example, an Ottawa artist-run-centre called Gallery 101 expressed interest in the project and ended up mounting a major retrospective of works on paper by H'Art artists. Also titled *Turning the Page*, the exhibition was on display for two months prior to the performance. Something else to have emerged from the collaborative process was a documentary film about the project. An Ottawa-based filmmaker named Andrew Hall, who has a longstanding relationship with H'Art of Ottawa, filmed virtually every rehearsal as well as the exhibition at Gallery 101, the *Turning the Page* performance, and interviews with all of the participants. The video was premiered in November 2014 at the Power of the Arts National Forum in Ottawa and is available online at <https://vimeo.com/114442912>.

Jessie Huggett, an artist, dancer, and disability rights activist with Down Syndrome who was involved in *Turning the Page*, had this to say about the experience:

Collaboration for me as an artist is really important because we are working with other people, other artists and it opens lots of opportunities and possibilities. We really got to be more open---a sense of openness and diversity for everyone--the artists of H'Art Studio, the NAC staff, Gallery 101 and the people in our community. It's important to have openness because when we share our art, we share who we are as people. People in the community get to know the artists and they discover what we as artists have to offer the world. (2014)

Among the many things that a more complete range of artists of all abilities has to offer is an expanded palette of unique ways of looking at, sounding in, and moving through the world. By showcasing the extraordinary range of creative expression that results from the unique perspectives of artists of all abilities, performances such as *Turning the Page* and *(Un)Rolling the Boulder* offer an alter-destiny co-created across difference, an elsewhere and an elsewhen, that imagines a more inclusive future.

In this article, we have shared two examples of collaborative AUMI-Futurist performances drawn from our own respective performance/research practices and communities. Of course, these are just two examples; an infinite number of possibilities remain for how to conduct AUMI-facilitated community performance and research. AUMI performances, and similarly inclusive performance practices in which musicians with diverse minds and bodies improvise with one another, have the potential to imagine--and, crucially, to actually create--a time and place of more equitable and integrated opportunities for artistic, social, and political modes of interacting and belonging. We hope others will be inspired to join in this exciting exploration of AUMI-Futurism. One of the beauties of such projects is that they will always yield different performances and insights, and explore different ways of improvising and interrelating with one another.

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## ABOUT THE AUTHORS

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**Sherrie Tucker** (Professor, American Studies, University of Kansas) is the author of *Dance Floor Democracy: the Social Geography of Memory at the Hollywood Canteen* (Duke, 2014), *Swing Shift: "All-Girl" Bands of the 1940s* (Duke, 2000) and co-editor, with Nichole T. Rustin, of *Big Ears: Listening for Gender in Jazz Studies* (Duke, 2008). She is a member of two major collaborative research initiatives: International Institute of Critical Improvisation Studies and Improvisation, Community, and Social Practice (for which she served as facilitator for the Improvisation, Gender, and the Body research area) both funded by the Social Sciences and Humanities Research Council of Canada. She is a founding member of the Melba Liston Research Collective, a member of the AUMI (Adaptive Use Musical Instrument) research team of the Deep Listening Institute, and founding member of AUMI-KU InterArts, one of six member institutions of the AUMI Research Consortium. She was the Louis Armstrong Visiting Professor at the Center for Jazz Studies at Columbia University in 2004-2005, where she was a member of the Columbia Jazz Study Group. With Randal M. Jelks, she co-edits the journal *American Studies*. She serves with Deborah Wong and Jeremy Wallach as a Series Editor for the Music/Culture Series at Wesleyan University Press.

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**Kip Haaheim** is a composer, musician, and digital artist currently living in Lawrence KS. After being a successful bassist, composer, and producer in the San Francisco Bay Area for more than twenty years he went back to school for a Masters degree at the University of Minnesota and then a doctorate at the University of Arizona. After teaching at the University of Arizona for two years he joined the faculty at the University of Kansas where he was tenured in 2007 and remains to this day. Haaheim has eclectic interests but spends most of his time composing and producing electro-acoustic music often involving multi-media. His collaboration with fellow composer Daniel Asia *Sacred and Profane* (Summitt Records 2002) is one of the first surround-sound audio DVDs ever released commercially. Since then he has created a substantial body of work comprising experimental videos, chamber music, audio installations, and various electro-acoustic compositions. H also composed and produced the score for Ryan Jones's documentary film *Fall from Grace* (originally broadcast on the Showtime cable television network), and the score for Kevin Wilmott's feature film *The Only Good Indian* (which premiered at the Sundance Film Festival and then had a significant theatrical release internationally). Both films are currently available on Netflix. In his electro-acoustic music he often mixes live musicians with computer-processed sounds and tends to favor live performance over fixed-media. Haaheim's

most recent work often features improvisation and the use of non-traditional methods of controlling audio playback and processing.