



SCHOOL OF  
**MUSIC, THEATRE & DANCE**  
UNIVERSITY OF MICHIGAN

# THE 5TH ANNUAL NORTH AMERICAN CONFERENCE ON VIDEO GAME MUSIC

*Saturday, January 13, 2018 & Sunday, January 14, 2018*

*E. V. Moore Building, 1100 Baits Dr., Britton Recital Hall*

*The Original Cottage Inn, 512 E. Williams St., The Michigan Room*

*Duderstadt Center, Computer & Video Game Archive, 2281 Bonisteel Blvd, Room B 474*



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## NACVGM 5 SCHEDULE

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*All events are in the E. V. Moore building, Britton Recital Hall, except where noted*

### **Saturday, January 13, 2018**

- 8:00 AM Registration, Coffee & Breakfast Hors d'Oeuvres (Brehm Pavillion)
- 9:00 AM Welcome and announcements
- 9:15 AM **Session I: Space, Presence, Place**, Karen Cook, chair  
“Sound and Semiosis in the Selenitic Age: Navigating Presence and Absence in the Soundscapes of *Myst*,” Stephen Armstrong  
“Sensing Thoreau’s Maps, Tracks, and Trails: Spatial Listening and Game Audio in *Walden*,” Kate Galloway  
“120 Shrines which are Related Only with One Another: Modernist Style and Neo-Narrative in *The Legend of Zelda: Breath of the Wild*,” Wesley Bradford
- 10:45 AM Break
- 11:00 AM **Session II: Medievalisms FTW**, Steven Reale, chair  
“On Adaptation, Ayres, and Assembly Language: Paul Webb’s Score for *Robin Hood: Prince of Thieves* (1991),” Dana Plank  
“‘The Things I Do For Lust ...’: Humor and Subversion in ‘The Bard’s Tale’ (2004),” Karen Cook
- 12:00 PM Lunch (on your own)
- 1:30 PM **Session III: Listening & Semiosis**, Neil Lerner, chair  
“Song Forms, Rock Tropes, and Metaphors for Listening to the *Mega Man* Series, 1987–1993,” William O’Hara  
“Narrating Near-Death Experience: A Semiotic Analysis of Chopin’s Music in *Eternal Sonata*,” Thomas Yee  
“‘STFU, n00b!’: Barriers to Listening in *World of Warcraft*,” Steven Reale
- 3:00 PM Break
- 3:15 PM **Session IV: Tropes & Stereotype**, Dana Plank, chair  
“Gaming Sober, Playing Drunk: Sound Effects of Alcohol in Video Games,” Peter Smucker  
“Tropes and Narrative Foreshadowing in *Final Fantasy IV*,” Sean Atkinson  
“Sounding Race and Racing Sound in *Fire Emblem: Radiant Dawn*,” Jay Maenhout
- 4:45 PM Break
- 5:00 PM Keynote I: “Creativity and Technology: Chocolate and Peanut Butter, or Oil and Water?” Marty O’Donnell
- 6:30 PM Conference Dinner (The Original Cottage Inn)
- 8:30 PM Gaming possible at U-M Computer & Video Game Archive

*Sunday, January 14, 2018*

- 8:00 AM Coffee & Breakfast Hors d'Oeuvres
- 9:00 AM **Session V: Transcription, Pedagogy, Creation**, Elizabeth Medina-Gray, chair  
“There’s no question you’ll be popular after performing these in front of your friends!’ — The Pedagogy and Performance of Piano Transcriptions of Video Game Music,” Matthew Thompson  
“Composing Retro Video Game Music as a Fine Art Elective for Non-majors,” Jesse Kinne  
“Strategies for Algorithmic Interactive Music Generation and Implementation in Video Games,” Alvaro Lopez
- 10:30 AM Break
- 10:45 AM Keynote II: “Gamifying Classical Music and Classifying Game Music,” William Gibbons
- 11:45 AM Lunch (on your own)
- 1:15 PM **Session VI: Fandom and Identity**, Karen Cook, chair  
“Rereading the Lifestream: Explorations of Identity and Society in Mega Ran’s *Black Matera: Final Fantasy VII*,” Kate Rogers  
“WoW Music Videos: ‘Classical’ Machinima, Fan Production, and the *World of Warcraft*,” James Deaville  
“Mariachi Mario: Translating Video Game Music Transculturally in Online Cover Videos,” Michael Austin
- 2:45 PM Break
- 3:00 PM **Session VII: Lightning Talks**, Steven Reale, chair  
“Using Music-Driven Video Games to Describe Musical Performances,” Ryan Thompson  
“‘Can’t You Simply Taste the Air of Foreboding?’: Anti-Pastoral Music, Landscapes, and Immersion in *Final Fantasy XII* and *XV*,” Marina Gallagher  
“How Musical Variation Creates Expectation in *Sonic the Hedgehog* (1991),” Stephanie Lind  
“Analyzing Walking Simulators,” Elizabeth Hambleton  
“Terpsichorean Vox: Hitoshi Sakimoto’s Choral Synthesis in the 16-bit Era,” Kevin Burke
- 4:15 PM Break
- 4:30 PM **Session VIII: Early Game Audio Analysis**, Matthew Thompson, chair  
“The Well(?) -Tempered Famicom: Variations Between Tuning Systems in Famicom/NES Games,” Alan Elkins  
“Music as Problem-Solving: Transcribing Tunes for the Atari 2600,” Andrew Schartmann  
“Chiptune: Ludomusical Shaping of Identity,” George Reid

## ABOUT THE CONFERENCE

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Now in its fifth year, the North American Conference on Video Game Music brings together scholars in the fields of musicology, music theory, ethnomusicology, media studies, sound studies, composition, and more to discuss all aspects of music in video games. Topics at past conferences have included case studies of influential games and composers, technology and its impact on game music, teaching game music, analyzing game music, and music's relationship to game narratives.

The first conference was the brainchild of William Gibbons, Neil Lerner, and Steven Reale, lead organizer, hosted at Youngstown State University in 2014 with a keynote presentation by Karen Collins. In 2015, Texas Christian University hosted with Gibbons as lead organizer and Winifred Phillips gave the keynote presentation. In 2016, Davidson College hosted with Neil Lerner as lead organizer and Kiri Miller gave the keynote presentation. In 2017, the University of Texas, Austin hosted with James Buhler as lead organizer, with a keynote presentation by Penka Kouneva. In 2018, The University of Michigan is hosting the conference and there will be two keynote speakers, Marty O'Donnell and William Gibbons.

The program and organization committee is composed of:

Matthew Thompson, *Lead Organizer* (University of Michigan)  
Karen Cook, *Program Chair* (University of Hartford)  
James Buhler (University of Texas, Austin)  
Neil Lerner (Davidson College)  
Elizabeth Medina-Gray (Ithaca College)  
Dana Plank (Ohio State University)  
Steven Reale (Youngstown State University)

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## ABSTRACTS AND PRESENTERS

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### *Session I: Space, Presence, Place*

#### **Sound and Semiosis in the Selenitic Age: Navigating Presence and Absence in the Soundscapes of *Myst***

Stephen Armstrong, Eastman School of Music

*Myst* (1993) shocked audiences by placing them in a surreal world with no action, no clear goal, and no way to die. The brainchild of American developers Rand and Robyn Miller, *Myst* became a breakout hit and attracted the notice of critics such as Edward Rothstein. The literary ambitions and innovative art direction of *Myst* have since occasioned numerous studies in literature, ecocriticism, psychology, educational design, and video game theory. Yet the sophisticated sonic puzzles of *Myst* have received little attention within sound studies and ludomusicology.

In this paper I examine the sound design of *Myst*, drawing on the insights of semioticians and sound specialists such as Niklas Luhmann, Eduardo Kohn, Bernie Krause, and R. Murray Schafer. The soundscapes of *Myst* derive their difficulty from their unusual shuffling of sounds within shifting networks of meaning; sound effects that at first seem irrelevant gradually coalesce into a range of semiotic networks, and these networks organize the sonic data into coherent solutions. Yet while environmental sounds become meaningful, human voices devolve into static and musical cues signify human absence. By downplaying the role of music and spoken word and forcing the player to reinterpret background “noise” as meaningful signifiers, *Myst* blurs the boundaries of silence, static, and semiosis, providing a rich site to explore the liminal space between the presence and absence of sonic meaning.

**STEPHEN ARMSTRONG** completed his master’s degrees in musicology and piano performance at Michigan State University, where he submitted a thesis on the historiography of Franz Liszt’s piano music. He has presented papers at AMS chapter meetings as well as the AMS-SMT national meeting in Vancouver (2016); a conference on “The European Salon: Nineteenth-Century *Salonmusik*” at the National University of Ireland, Maynooth; the North American Conference on Video Game Music (2016, 2015); and the North American Conference on Nineteenth-Century Music (2015). He was also an invited speaker at a symposium on “Bodies of Art: Music, Literature, and Disability” at Misericordia University (2016). He has published two articles, the first in the *Journal of the American Liszt Society* (2015) and the second in *Women & Music* (2017). An avid pianist and rock keyboardist, he has performed throughout his native Michigan and in Italy. His research interests include virtuosity, mysticism, and music and literature studies. He is currently a PhD student and Sproull Fellow at the Eastman School of Music.

#### **Sensing Thoreau’s Maps, Tracks, and Trails: Spatial Listening and Game Audio in *Walden***

Kate Galloway, Wesleyan University

On July 4th, 1845, Henry David Thoreau went to the woods of Walden Pond to begin his experiment in living life simply in nature. On July 4th, 2017, I turned on my computer and wandered the virtual woods and Thoreau’s cabin at Walden Pond, navigating ephemeral sensory cartographies from Thoreau’s perspective. Video games can serve as environmental texts, forging connections with the environment through sensuous experiences of place. Human

beings are “placelings” Edward S. Casey argues, “we are not only in place but of them” (Casey 1996: 19). Game audio serves as an entry point to understanding how visual, ludic, and game audio design models ecological processes, environmental stewardship, and representations of nonhuman materiality and musicality. Using a geospatial analysis of game audio, I argue that digital media cannot only be reductively approached as a cause of environmental degradation, as it can be used in inventive and affective ways to communicate environmental topics. How can a game experience evoke the central themes of the original text, while still allowing the player to explore their own path? Do we have to play “like” Thoreau to understand Thoreau’s experience? Through an examination of *Walden’s* game audio, I address these questions and illustrate how sound plays a central role in navigating this reconstruction of Thoreau’s Walden Pond. Through the combination of narration, music, sound effects, and environmental sound, the player comes to know Walden Pond through Thoreau’s ears and eyes, sensory information reconstructed through listening to the past as reflected in Thoreau’s writings.

**KATE GALLOWAY’s** research blends musicological and ethnomusicological modes of inquiry into the study of musics of the 20th and 21st centuries, particularly popular and experimental music that use analog and digital sound technologies to remediate, remix, and reuse environmental and energy soundscapes and information. Her other research interests include sonic cartography, radio, sound studies, science and technology studies, new media studies and audiovisual culture, and the digital humanities.

### **120 Shrines which are Related Only with One Another: Modernist Style and Neo-Narrative in *The Legend of Zelda: Breath of the Wild***

Wesley Bradford, University of Louisiana, Lafayette

The music of the *Legend of Zelda* franchise is a perennial topic in video game music scholarship. The newest installment of the franchise, *The Legend of Zelda: Breath of the Wild* (hereafter BOTW) has a significantly different musical pallet than earlier games, prompting discussions in the gaming world with varied titles ranging from “Does *Breath of the Wild* Have Memorable Music?” (Harr, 2017) to “The Genius Behind *Breath of the Wild’s* Music” (Walker, 2017). Whether gamers like or loathe the sounds of BOTW, it is clear that the music stands out from other games in the franchise.

Jason Brame (2011), Elizabeth Medina-Gray (2014), and Steven Reale (2015) have explored various aspects of the series, including thematic unity, spatial/transformational relationships and modular combinations. This paper suggests a different set of relationships for the new game’s music. Drawing on work by Robert Hatten (2004) and Byron Almén (2008), I propose that the music of BOTW is situated around topical functions, stylistic idioms, and a neo-narrative ideology. The game consistently contrasts the modernist past with a pastoral present, and this conflict is revealed in both themes and instrumentation throughout. Modernist idioms with weak or nonexistent tonal centers feature prominently around Link and objects of the past (shrines, guardians), while more standard, tonal/modal ‘themes’ appear around living communities (stables, villages). This organization helps players develop personalized neo-narrative arcs within a broad open-world game. The musical departure showcases an evolution in both narrative gameplay and the interaction between music, environment, and gamer.

Dr. **WESLEY BRADFORD** is an Assistant Professor and Coordinator of Music Theory at the University of Louisiana at Lafayette. Bradford joined the faculty at UL Lafayette in 2016 after completing his doctorate at Louisiana State University. His dissertation combines mathemati-

cal and narrative approaches to music analysis, focusing on the analysis of twentieth century monophonic woodwind works. Bradford has also presented on a wide variety music, including analyses of pieces by John Cage and C.P.E. Bach. The majority of this research focuses on applying narrative and/or transformational approaches in order to suggest new avenues for listening to and understanding music. In his limited free time, Bradford enjoys a variety of RPG video games, board games, and reading sci-fi and fantasy books.

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*Session II: Medievalisms FTW*

**On Adaptation, Ayres, and Assembly Language: Paul Webb's Score for *Robin Hood: Prince of Thieves* (1991)**

Dana Plank, Ohio State University

One common assumption about adaptation is that it is a dilution—a paler copy of an experience. Yet, Paul Webb's score for *Robin Hood: Prince of Thieves* (1991) bears no resemblance to Michael Kamen's lushly-orchestrated film score. Though Webb's material is original, its textures and voice leading suggest Renaissance roots; anachronistic for the context of the Crusades, but alluding to Elizabethan ayres and instrumental dances in a way that echoes the identification of Robin Hood with England. As Karen Cook's work (on *Civilization IV*, and chant in games) has shown, implying the Middle Ages in the ludomusical context is often about constructing a version of the past that sounds the way people *think* it may have sounded, rather than striving for historical accuracy.

Beyond these tendencies to collapse the distant past musically for aesthetic ends, certain technical considerations make Renaissance music better suited to the NES: ground or lament bass lines are easily looped, meters are regular and thus easier to encode (rather than free, as in Gregorian chant), and the limited number of sound channels on the console are more conducive to textures found in Renaissance polyphony. However, what is most striking in the score is Webb's innovative use of the timbral possibilities of the triangle channel to imply unpitched percussion, despite apparent harmonic clashing with the upper voices; this belies his deep knowledge of the sound chip's capabilities. Webb's score not only recognizes resonances: in translating ayres into assembly language, he created something remarkably idiomatic for the NES.

**DANA PLANK** is a Ph.D. candidate in Historical Musicology at The Ohio State University. She earned her BA in violin performance and music history from Case Western Reserve University and the Cleveland Institute of Music, and her MIM in violin performance from Cleveland State University. Her dissertation focuses on the aural representation of injury, disease, and mental illness in 8- and 16-bit video game soundscapes. Her research interests also include the sacred music of Carlo Gesualdo, minimalist and post-minimalist opera, and music and identity. In addition to her academic pursuits, she remains active as a violinist and chamber musician.

**'The Things I Do For Lust ...': Humor and Subversion in 'The Bard's Tale' (2004)**

Karen Cook, University of Hartford

The trope of the bard dates back centuries. As early as the eighteenth century, antiquarians revived the bard as an emblem of nationalism in the face of tyranny and cultural suppression.

In poetry, literature, and even musical scholarship, the bard symbolized defiance, liberty, and a heightened affinity with nature. This mystical connection to nature, combined with the bard's traditional role as lore-keeper, found a welcome home in fantasy literature, where music often had magical agency. Such concepts were perpetuated in *Dungeons & Dragons*, where the bard was a storyteller but also a fighter, thief, and mage, who cast spells via music. Later video games capitalized on the D&D-style bard, creating characters that did everything from praising the game's hero or narrating the game to improving morale to musically attacking enemies.

This archetypal conception of the bard is turned on its head in "The Bard's Tale" (2004), an action-based RPG. Here, the Bard acts purely in his own self-interest, a boorish, sarcastic antihero. He sings no one's praises; he narrates nothing; he improves no one's morale; and his tunes, rather than attacking his foes directly, instead summon a variety of creatures to do his dirty work for him. In this respect, music is central to the formation of the Bard's RPG "party." Unusual for the genre, though, the game has no real soundtrack aside from the Bard's tunes. I argue in this paper that the typical traits of both the bard and the RPG are thus subverted, at the heart of which subversion lies music.

Dr. **KAREN COOK** specializes in medieval and Renaissance music theory, history, and performance. She is currently working on a monograph on the development of rhythmic notation in the fourteenth and early fifteenth centuries. She also maintains active research interests in popular and contemporary music, especially with regard to music and identity in television, film, and video games. She frequently links her areas of specialization together through a focus on medievalism, writ broadly, in contemporary culture. As such, some of her recent and forthcoming publications include articles on fourteenth-century theoretical treatises, biographies of lesser-known late medieval theorists, and the use of plainchant in video games, a book chapter on medievalist music in Harry Potter video games, and a forthcoming co-authored Oxford Bibliography on medievalism and music. Her paper today focuses on the humorous subversion of the trope of the bard in *The Bard's Tale*.

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### *Session III: Listening & Semiosis*

#### **Song Forms, Rock Tropes, and Metaphors for Listening to the *Mega Man* Series, 1987–1993**

William O'Hara, Gettysburg College

The orchestra plays a central role in the discourse on early chip-based video game music: as an object of imitation (Cheng 2014, Altice 2015), a locus of prestige (Collins 2008, Austin 2016), and even a Platonic ideal: orchestral splendor, for some fans, is "how [the music] is meant to be heard" (Gibbons 2015). This paper explores rock music and instrumentation as an alternate metaphor through which to analyze chip music, using the "classic" *Mega Man* series (*Mega Man I* through *VI*, published by Capcom for the Nintendo Entertainment System, 1987–1993) as a case study. The six soundtracks—written by six different composers—develop a consistent style that borrows formal structures and harmonic schemas from rock music (Nobile 2016, Doll 2017), and uses the NES's four synthesizer channels to imitate a rock combo's guitar, bass, and drums. Following Summach (2012), this paper categorizes the song forms found in the fifty-eight level themes from the six games—nearly all binary or verse/chorus/bridge forms—and briefly analyzes the techniques they use to imitate rock. The soundtracks

do not only employ formal features like guitar solos and call and response passages; they also simulate performance techniques such as bent notes, “hammer-ons,” and drum breaks. While the *Mega Man* games are far from unique in imitating rock idioms, their substantial, closed corpus offers an alternative to game music’s contemporary appeals to orchestral prestige and plentitude, throwing into relief the varied interpretive frames through which vintage game music is heard today.

**WILLIAM O’HARA** is an Assistant Professor of Music at Gettysburg College. He received his Ph.D. in Music Theory from Harvard in May 2017, and previously served on the faculty at Tufts University. His research interests include the intersections of technology and musical style in video game music, tonal analysis and the history of music theory, and the digital humanities. His most recent writings appear in the Newsletter of the Mozart Society of America, and *Musicology Now*, and his review of David Lewin’s *Morgengruss* is forthcoming in the journal *Music Theory and Analysis*. Bill is a member of the Society for Music Theory’s IT & Networking Committee, and from 2013 to 2016 was an editorial assistant for the *Journal of the American Musicological Society*. He has presented papers at the Society for Music Theory, American Musicological Society, International Association for the Study of Popular Music. He most recently appeared at NACVGM at the inaugural conference in Youngstown in 2014, with a paper on the experimental aesthetics of Proteus.

### **Narrating Near-Death Experience: A Semiotic Analysis of Chopin’s Music in *Eternal Sonata***

Thomas Yee, University of Texas, Austin

Rarely do the worlds of classical music and video games collide explicitly; when they do, as in the 2007 JRPG *Eternal Sonata*, the result is of marked semiotic interest. The game’s complex metafictional plotline—involving multiple levels of narrative seeking to blend fantasy and reality—invites speculation and interpretation, particularly concerning its multivalent ending and narrative themes. However, rigorous interpretative attention has not been directed towards the game’s music to uncover what significance it holds for the meaning of the game’s story. Though William Gibbons concludes that “nothing in *Eternal Sonata*’s score hints at [Chopin’s music],” the soundscape of Chopin’s real-world *oeuvre* and Motoi Sakuraba’s original soundtrack are on occasion intricately interwoven (Gibbons, forthcoming; 201). This presentation, “Narrating Near-Death Experience: A Semiotic Analysis of Chopin’s Music in *Eternal Sonata*,” uses recently-developed analytic methods from the burgeoning field of musical semiotics to glean poignant interpretative meaning from the game’s musical surface. By invoking music-theoretic work in intertextuality (Klein 2004), musical narrative (Almén 2008), and virtual agency (Hatten, forthcoming), I argue that the resulting intertext is a meaningful semiotic *unity*—not a disjunction. In particular, this presentation will undertake a music-semiotic analysis of Chopin’s “Revolutionary” Étude Op. 10, No. 12 and “Raindrop” Prelude Op. 28, No. 15 as troped with tracks from Sakuraba’s original score. As in the study of film music semiotics, this score stands as a hermeneutic key for decoding artistic meaning in *Eternal Sonata*.

Some composers found their love of music at the symphony hearing Brahms or Beethoven—**THOMAS YEE** discovered his from the 16-bit beeps and boops of the family Super Nintendo. Though his musical adventures have broadened from slaying virtual dragons, he has carried music’s narrative power with him ever since. Whether depicting what amazing phenomena of light in nature might sound like, exploring the stories and deeds of unsung heroes during the Holocaust, or warning against the dangers of otherizing using the mythos of Leviathan,

Thomas seeks to connect with listeners' hearts and minds through the power of musical communication. Specializing in Wind Ensemble composition from study with Donald Grantham, Dan Welcher, and Jerry Junkin at the University of Texas at Austin, Thomas' catalogue for Wind Ensemble is published with Murphy Music Press. Blending the roles of composer and theorist, Thomas' scholarly concentration is the field of music and meaning, developed in his work with Robert Hatten.

**'STFU, n00b!': Barriers to Listening in *World of Warcraft***

Steven Reale, Youngstown State University

The lifeblood of a subscription-based game like *World of Warcraft* (Blizzard, 2004—) is its ability to retain its user base; what made WoW so successful, drawing at its peak 12 million concurrent subscribers, was in part a steady release of new content through patches and expansions and its careful accommodation of many different playstyles. Notably, the vast amount of game content produced to meet player demand for novel and focused gaming experiences means that only the most ardent fans will have the time or dedication to fully experience all available content. This paper, inspired by what Dana Plank has called “the silence of the circuits,” examines synchronic and diachronic barriers that prevent players from listening to the entirety of WoW's in-game soundtrack.

Diachronic barriers are the kind that emerge when Blizzard releases an expansion that renders previous end-game content obsolete. Regions lie empty as players migrate away to new zones that have been added elsewhere; the musical accompaniments for these older areas become unheard melodies: notes within the machine that no longer sound. Synchronic barriers exist when a player lacks the resources required to access specific content. Raid dungeons, for example, demand the coordination of as many as forty expert players to succeed in their encounters. Few players will ever have the opportunity to fully explore the most challenging of these dungeons; their musical accompaniments will only be heard in-game by the elite.

**STEVEN REALE** is Associate Professor of Music Theory at Youngstown State University. Since completing his dissertation at the University of Michigan on Wagner's *Ring* cycle, he has become an acknowledged leader in the field of video game music, a topic on which his scholarly publications and presentations have attained an international impact. He is a co-founder of the North American Conference on Video Game Music and was the lead organizer of the first conference, which was held at YSU in 2014. He received the UK Ludomusicology Research Group's inaugural Award for Excellence in Game Audio Research for his 2015 presentation at the annual meeting of the Society for Music Theory, and his two-part video series on the music from the *Portal* franchise of video games was published by that society's new video journal, *SMT-V*. He is presently collaborating with Will Gibbons on an edited volume of essays on music in role-playing games.

## Gaming Sober, Playing Drunk: Sound Effects of Alcohol in Video Games

Peter Smucker, Stetson University

This paper develops a framework for associations between sounds, video games, and alcohol. Some recent studies (Kowert and Quandt 2015; Cranwell et al. 2016) examine concerns regarding representations of drugs and alcohol in video games, while others (Montgomery 2006; Schultheis and Mourant, 2001) use Virtual Reality to simulate intoxication. These studies primarily focus on the presence and stereotypical use of alcohol, but offer little attention to related sounds and music, or the increased integration between sound design and game-play. This paper lays historical, cultural, and music-theoretical groundwork for associative sounds of alcohol in multimedia experiences, particularly video games.

I first define four primary areas of inquiry into sonic representations of alcohol in multimedia: 1) Sound Iconography, which highlights representative sounds of objects and personal behaviors; 2) Sound Environments, or unique sonic locations and settings; 3) Musical Depictions of Drunkenness, such as the use of specific orchestrations and cultural influences; and 4) Simulation of Intoxication, which looks specifically at altered sonic perceptions and experiences. I then demonstrate attributes of these four features through examples from the following video games (and other media): *Bioshock*; *Red Dead Redemption*; the *Final Fantasy* franchise; Warner Brothers' cartoon *High Note*; *World of Warcraft*; a 2017 advertisement series for Busch beer; and others. I conclude the paper by considering a larger context of sound and music studies related to alcohol, drugs, and addiction.

**PETER SMUCKER** Pete Smucker earned his Ph.D. in Music Theory in 2015 from the University of Chicago with a dissertation on a listener-sensitive analytic approach to Elliott Carter's late Chamber music. He is Assistant Professor and Director of Music Theory at Stetson University, having previously served on the faculty at the University of Notre Dame and Valparaiso University. His research interests include the music of Elliott Carter, transformational theories, music theory pedagogy of post-tonal music, and intersections of music and society in multimedia. He has presented on such diverse topics as expressive timing in barbershop quartet singing, combinatorial extensions of the Complement Union Property, and a lecture recital on songs of Elliott Carter. Recent conference appearances include Music and the Moving Image, and Music Theory Southeast. This is his third appearance at NACVGM, having previously presented on the use of Beethoven's *Moonlight Sonata* in video games, and the use of Appalachian folk music in *Kentucky Route Zero*. Today's paper examines associations between sounds, video games, and alcohol.

## Tropes and Narrative Foreshadowing in *Final Fantasy IV*

Sean Atkinson, Texas Christian University

David Neumeier's manuscript on film music considers topics and tropes along a continuum, where topics occupy a space of "cultural, stable, and familiar," while tropes represent the "cinematic, unstable, and creative" (Neumeier 2015). Tropes occur when previously unrelated types are juxtaposed in such a way as to provoke a new interpretation (Hatten 1994). Building on this conception of topics and tropes, this presentation identifies tropes in video game music that serve to enhance and support the game's narrative. Specifically, the music of *Final Fantasy IV* provides two examples of tropes that compliment gameplay and foreshadow narrative. Both

tropes involve the specific manipulation of important topical characteristics found in the military topic and what I call the *flying* topic.

The military topic and associated trope are used to comment on and foreshadow the transformation of Cecil, the game's central character, as he transitions from the role of anti-hero to hero. The flying topic is presented as a trope, with most of its defining characteristics inverted. For example, music that should contain ascending musical gestures instead prominently features descending gestures. These inverted figures, along with several other altered topical characteristics, create a trope that foreshadows an important narrative twist of the game in which players use the game's Airship to descend *below* the surface and explore a vast underground world. These tropes provide dramatic support for the game's narrative, but more broadly demonstrate the potential of tropes in the study of video game music.

**SEAN ATKINSON** is an Assistant Professor of Music Theory at the TCU School Music where he teaches courses in multimedia analysis, music theory, and aural skills. Sean's research, which focuses broadly on issues of meaning in multimedia, can be found in *Music Theory Online*, *The Dutch Journal of Music Theory*, and *Indiana Theory Review*.

### **Sounding Race and RACING Sound in *Fire Emblem: Radiant Dawn***

Jay Maenhout, University of North Carolina, Chapel Hill

The plot of Nintendo's *Fire Emblem: Radiant Dawn* (2007) is epitomized by the protagonist's guiding question: "Do you think a person's worth is decided at the moment of their birth?" The antagonists of the story certainly believe so. Our hero makes it his mission to expose a faraway country's slave trade; the laguz, a race of animal-human shape shifters, are abducted from their homes in the forest and kept as living trophies for the noblemen. These nobles refer to the laguz using racial slurs, most commonly "filthy, hairy sub-humans." Though much musicological literature exists discussing the ways in which composers of Western art music have depicted subaltern characters and communities, no such study has been conducted in regard to video game music.

Just as the laguz are "othered" by their race, so too is their alterity marked by their music. While the slave-owner Oliver is represented by harpsichord music heavily reminiscent of a J.S. Bach invention, his laguz slave Reyson sings unmetered, *a cappella* melodies in an invented language, seemingly aimless in their contour and ambiguous in their key area. In other words, Oliver's music is teleological and decidedly Western, while Reyson's is othered by its lack of cultural location and specificity. Through post-colonial theory, Peircean semiotics, studies of the master-slave dialectic in critical race theory, and the phenomenology of temporal experience, I engage with *Radiant Dawn's* music to uncover the problematic and dangerous ways in which composers have reduced subaltern characters to monolithic structures.

**JAY MAENHOUT** is currently a second-year graduate student at the University of North Carolina at Chapel Hill. Jay is largely concerned with issues of gender and sexuality and particularly enjoys the repertoires of video game music, top 40, and early music. Jay has previously presented papers at Music and the Moving Image, the New Jersey Women's and Gender Studies Consortium, and the annual meeting of the College Music Society, where he was awarded the Diane Follet Prize for Best Student Presentation. An actively performing tenor, Jay has sung major works with the Philadelphia Orchestra, Berlin Philharmoniker, New Jersey Symphony Orchestra, Vienna Philharmonic, and the Duke University Chapel Bach Choir. He is also the co-founder of the Summer Performing Arts Collaborative, a nonprofit organization in Hudson, MA that produces musicals with students in grades 1-12.

## Creativity and Technology: Chocolate and Peanut Butter, or Oil and Water?

**MARTY O'DONNELL** earned his Masters of Music Degree in Composition with honors from USC in 1981. He then founded the Chicago-based commercial music and sound production company, TotalAudio, which in 1997 produced sound design for Cyan's *Riven*, *the Sequel to Myst*, and created all of the audio for Bungie's award winning *Myth* series. His body of work also includes numerous original scores for television, radio, and film.

In the spring of 2000, ten days after Marty accepted a position as Bungie's Audio Director and Composer, Microsoft purchased the studio and moved them to Redmond so they could focus their efforts on developing *Halo* for the Xbox platform launch. The highly acclaimed *Halo* series went on to be extremely successful, with *Halo 3* shattering entertainment records for both single day and first week sales, and with the total number of *Halo* games played now tallied in the billions.

The audio and music for the Halo series has received numerous honors and awards, including the Game Developers Choice Award, the Edge Award, Rolling Stone Magazine's Best Game Soundtrack, and Best Sound/Music from the AIAS, IGDA, GANG, TEC, and Spike TV. The critically acclaimed soundtracks are also best sellers.

In July of 2007, Marty became one of the partners in the once again independent Bungie. His final project with them, *Destiny*, featured music in collaboration with Sir Paul McCartney. In addition to creating and overseeing sound design, music, and implementation, Marty also did the casting and directing of all the voice acting for Bungie's games. The music and audio from *Destiny* have won several awards including Best Audio and Best Music from the AIAS. He was awarded GANG's Lifetime Achievement Award in 2016.

Marty is co-founder and co-owner of Highwire Games in Seattle. Their first title, *Golem*, is an exclusive title for Playstation VR and will be released later this year. He is also composed and produced *Echoes of the First Dreamer*, the musical prequel to *Golem*, which is available now.

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### *Session V: Transcription, Pedagogy, Creation*

**“There's no question you'll be popular after performing these in front of your friends!”**  
**The Pedagogy and Performance of Piano Transcriptions of Video Game Music**  
Matthew Thompson, University of Michigan

There has been a practice especially in Japan as well as the US since the 1990s of publishing piano transcriptions of video game music. To date, these scores have received virtually no scholarly attention, though internet performances of them can garner millions of views and pianists with classical backgrounds now tour performing these pieces. This paper explores pieces from piano collections of major game series like *The Legend of Zelda*, *Super Mario*, *Final Fantasy*, *Chrono Trigger*, and *Kingdom Hearts*. The presentation will demonstrate the variety of these arrangements in a wide range of difficulties, from early-intermediate level to advanced concert repertoire, from jazzy to “original sound” versions, and from official published pieces to those found online, created by fans. The piano pedagogy of these will be discussed, many

based on a piano method by Ferdinand Beyer, through newly created translations of the Japanese pedagogic and performance notes found in the scores, provided by the author courtesy of an SMTD research grant. The paper culminates with discussion of possible new arrangements to be made addressing pedagogic gaps in the repertoire, it explores a lucrative and creative outlet for performing pianists, and further proposes the argument that these pieces are worthy of incorporation into university teaching curricula.

**MATTHEW THOMPSON**, DMA— collaborative piano, is Assistant Professor of Music at the University of Michigan School of Music, Theatre & Dance. In addition to being a vocal coach for graduate voice students, his teaching includes “Introduction to Diction and IPA” and groundbreaking creations like “Video Game Music.” As a pianist, Thompson has partnered with operatic celebrities like Thomas Hampson, rising international stars like Vince Yi, and even musical theater gurus like Tony Award winner Gavin Creel. He enjoys performing with U-M wind and brass faculty as well, and recently received a grant from U-M Center for Japanese Studies to record “Japonica,” a performance of newly composed Japanese oboe/piano duos with alumnus Dr. Alex Hayashi. His undergraduate degree with highest honors and highest distinction is from the University of North Carolina at Chapel Hill and his graduate degrees, studying with Martin Katz, are from the University of Michigan.

### **Composing Retro Video Game Music as a Fine Art Elective for Non-majors**

Jesse Kinne, University of Cincinnati - College Conservatory of Music

I am currently teaching the third iteration of an original course on video game music for non-music majors. This presentation: (1) describes the overall structure and content; (2) discusses the most and least successful aspects; and, (3) provides detail on innovative aspects of the course. The course provides students with a hands-on experience culminating in a creative project. My goal is for students without prior musical training to not only develop a deeper appreciation of art, but to acquire the technical knowledge and confidence to compose their own 3 minute piece of convincing video game music. The presentation outlines the content and coordination of the course’s three main components—reading, gameplay, and composition—emphasizing the innovative aspect: composition. Readings on early game audio technologies contextualize our composition software, FamiTracker, which emulates an NES technological environment. Music theory is delivered through analysis of game music, favoring games for which music is a ludic element (e.g. *Aquaria*, *Beatbuddy TotG*, *Proteus*).

A series of scaffolding model composition exercises begin with my own short compositions absent a single layer (such as a melody, or drum groove), which allows students to focus on one musical component at a time. As students progress they become responsible for contributing multiple layers and longer passages, culminating in each student contributing an entirely original piece to a class soundtrack. The class soundtrack is then imported into *Crypt of the NecroDancer*—a rhythm-game / dungeon-crawler mashup with retro themes—and the course concludes with students playing *NecroDancer* to their own compositions.

**JESSE KINNE** is a PhD candidate in music theory at the University of Cincinnati, CCM, where he is completing a dissertation on Groove Counterpoint. He has taught classes on video game music, Dave Matthews Band, and the history of rock and jazz; and this Spring will teach a course on Groove Analysis examining rhythmic counterpoint in backbeat-based musical idioms. Jesse has presented work at numerous regional and national conferences, and in 2016 received the Rocky Mountain Society for Music Theory’s Best Student Paper Award. *A Link to*

*the Past* is Jesse's favorite Zelda title, and he's a proud member of the *Path of Exile* community, having played since the original closed beta. Recently, Jesse acquired a Super Nintendo Classic Mini and began playing Final Fantasy for the first time.

## **Strategies for Algorithmic Interactive Music Generation and Implementation in Video Games**

Alvaro Lopez, University of California, Riverside

In this paper I review the concept of algorithmic generative music and discuss the advantages and challenges of its implementation in videogames. Excessive repetition in music material during gameplay has been tackled primarily by using random or sequential containers in sound design software solutions, as can be evinced in the *Dynamic Music Units* in Audiokinetic's Wwise. This approach provides a higher variety through recombinatorial properties of music tracks and also a responsive and interactive music stream. However, this methodology uses pre-recorded music sequences that reappear and are easy to recognize throughout gameplay. Game music scoring following generative principles as *single-seed* design, in which algorithmic procedures generate material based on rules in real-time interaction, has had a discrete but noticeable outbreak as can be seen in *No Man's Sky* (Hello Games, 2016).

While algorithmic note-by-note generation can offer interactive flexibility and infinite diversity, it poses significant challenges such as achieving performance sensibility and producing a distinctive narrative style through program design. Starting with music generation, I examine and evaluate implementation possibilities and technical challenges of algorithmic composition studies that use Markov models, a- life/evolutionary music, generative grammars, agents, and artificial neural networks/deep learning. According to those models, I outline rule-based strategies for music transformation using contextual gameplay situations such as environments, events and actions. Finally, I propose a comprehensive music engine model based in modular instances of algorithmic music generation featuring control/interaction in connection with a procedural sound rendering system.

**ALVARO LOPEZ** is an electronic musician, composer and sound designer, BM in Composition and Production, and MA in Music Technology. He is currently a PhD candidate in Digital Composition at UCR focused on artificial intelligence for music analysis, generation and composition. Lately, sound designer and music composer for the game *Recollect* from UCR Brain Game Center, his work is part of an on-going research project in memory and cognition. He has worked as mix engineer, sound designer and sound track composer for movies, short films and documentaries, alternating with instruction in digital audio for media in Colombian universities. His audiovisual interactive pieces featuring custom-design wireless UI have been part of the New Music Festival in Akron, OH, (2010-2012) playing 1960s analog synthesizers, and UCR is Composing (2015-2017) using gyroscopes and body motion, among others. His experimental audiovisual montages have been presented in several international festivals in the last ten years.

## Gamifying Classical Music and Classifying Game Music

Dr. **WILLIAM GIBBONS** is Associate Professor of Musicology and Associate Dean of the College of Fine Arts at Texas Christian University, where he teaches courses in contemporary music history and culture. His interdisciplinary research explores topics including musical canons and repertoires, as well as the history and interpretation of music in multimedia.

Gibbons's scholarship has been published in a wide range of academic journals, as well as essay collections including *Ludomusicology*, *The Palgrave Handbook of Sound Design and Music in Screen Media*, *Debugging Game History*, and *The Routledge Companion to Screen Music and Sound*, as well as forthcoming contributions to *The Oxford Handbook of the Operatic Canon* and *The Oxford Handbook of Music and Advertising*.

He is the author of the 2013 book *Building the Operatic Museum: Eighteenth-Century Opera in fin-de-siècle Paris* (University of Rochester Press), which explores issues of nationalism, historicism, and culture through the evolution of the modern operatic repertoire. In 2014 he co-edited the essay collection *Music in Video Games: Studying Play* for Routledge Press, and is currently co-editing a second volume for Routledge, tentatively titled *Music in the Role-Playing Game: Heroes & Harmonies*.

His new book, *Unlimited Replays: The Art of Classical Music in Video Games*, is forthcoming in early 2018 from Oxford University Press. This study examines the complex relationship between classical music and games from a variety of perspectives, covering topics from the prominence of classical music in early game soundtracks to the rise of orchestral game music performances today.

An advocate for public engagement, Gibbons frequently collaborates as guest speaker and program annotator with arts organizations in the Dallas-Fort Worth Metroplex, including the Dallas Symphony, the Dallas Winds, and the Fort Worth Opera Festival. He also performs regularly as a collaborative pianist, most recently performing concerts in the US and France as part of the Ataraxia Duo, an ensemble dedicated to commissioning and performing contemporary works for flute and piano.

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### Session VI: Fandom and Identity

#### **Rereading the Lifestream: Explorations of Identity and Society in Mega Ran's *Black Materia: Final Fantasy VII***

Kate Rogers, Case Western Reserve University

Released in 1997, *Final Fantasy VII* is one of the most successful video games to date, selling over eleven million copies worldwide and retaining replay value today. It is no surprise, then, that a fan who grew up playing the game created a concept album about it. Raheem Jarbo, more commonly known by his stage name Mega Ran, is a rapper who creates what he calls "chip hop," a genre of music that involves rapping over beats reminiscent of early game console sounds. His concept album *Black Materia* (2011) is a reworking of the music, characters, and story from *Final Fantasy VII*, a game well-known for its original score by Nobuo Uematsu.

In this paper, I show how Mega Ran reworks Uematsu's score to create a new soundscape and narrative structure for *Final Fantasy VII*. Drawing on theories about the individualization of mass culture, I explore how Mega Ran rereads the game, creating a version of the narrative that combines the original story with his own retellings and those of his audience. By embodying different personalities from the game, he gives new voice to characters who have previously been known only by their musical leitmotifs and on-screen texts. He also ties the dystopian landscape of the twenty-year-old game to problems facing the world today with tracks about current societal issues. Black Materia is a text that tells multiple stories, bringing together the lived experiences of Mega Ran and his audience with the music and story of *Final Fantasy VII*.

**KATE ROGERS** is a PhD Candidate in Historical Musicology at Case Western Reserve University in Cleveland, Ohio. Her research interests include musical play, the early video arcade soundscape, and the intersections of video game music and popular culture. Kate has presented her work at the IASPM-US Annual Conference as well as local and national meetings of the American Musicological Society. She is currently completing a dissertation about the changes in cultural perceptions of game sound in America.

### **WoW Music Videos: "Classical" Machinima, Fan Production, and the *World of Warcraft***

James Deaville, Carleton University

The release of *World of Warcraft* in late 2004 and the activation of YouTube in early 2005 represented a fortuitous coincidence for gamers, for the convergence of media forms afforded players the opportunity to create and circulate video material based on the game. In particular, in the early years fans fashioned music videos—called Machinima—that set WoW game play to external music, often popular songs. The videos emerged at a time when the new platform YouTube was inspiring media fandom to explore remixing audio and video (Freund, 2014: 288), whether in recut trailers or Machinima. As the first MMOPRG to catch the attention of academics, WoW spawned a respectable body of scholarly literature (e.g. Corneliusen & Rettberg, 2008; Nardi, 2010; Chen, 2012), yet the fan-generated videos have eluded closer study, possibly because of their rudimentary editing technologies. (Pace et al, 2013)

This paper will study the music videos from the "early" or "Classical" phase of WoW Machinima (Pace et al, 2013: 288), which extends from 2005 to about 2008. The videos appropriated complete songs from external sources in lo-fi audio to accompany edited game footage, typically in ironic or humorous interpretations. This creative fan labor resulted in such popular WoW music videos as "500 Miles" (The Impalers), "Bohemian Rhapsody" (Queen), and "Here Without You" (3 Doors Down), which adapt game characters' actions to fit the narrative of an existing soundtrack. Through such Machinima music videos, fans could demonstrate game knowledge, technological ability, and musical taste while entertaining fellow gamers.

**JAMES DEAVILLE** teaches music in the School for Studies in Art and Culture of Carleton University, Ottawa, Canada. He has edited *Music in Television* (Routledge, 2010) and with Christina Baade has co-edited *Music and the Broadcast Experience*. (Oxford, 2016). He is currently working on a study of music and sound in cinematic (and video game) trailers, a result of the Trailaurality research group that has been funded by the Social Sciences and Humanities Research Council of Canada. He has contributed a variety of articles and book chapters on music and its intersections with media, most recently an article for *American Music* on music at the political party conventions of 2016. With Ron Rodman and Siu-Lan Tan he is co-editing an anthology on music and advertising as one of the Oxford Handbooks.

## **Mariachi Mario: Translating Video Game Music Transculturally in Online Cover Videos**

Michael Austin, Howard University

The United States and Japan have a unique symbiotic relationship centered around entertainment, pop culture, and their associated artifacts. Markets and consumer demand from each country sustain a steady flow of fashion, music, films and television, animation, and video games across the Pacific Ocean in both directions. And while video games and their music make a profound impact on the dominant pop cultures of both countries, they also exert influence both on more traditional institutions (such as Western symphonic orchestras that now play concerts of video game music, for example) and on other minority and non-Western cultures and subcultures. Video game fans among these groups that fall outside of the dominant cultures of the US and Japan have claimed video game music as their own through the performance of this music in online cover videos on instruments and in ensembles unique to their specific culture.

Taking the work of groups such as the Mariachi Entertainment System and Famikoto as examples, this paper examines the translation of video game music into non-Western and “world music” idioms as a form of fan labor. I will consider some of the intersections and influences of video game music within various non-Western and “ethnic” contexts, and I will discuss the exploration and expression of these influences through multicultural participation in video game music fandom as seen in online cover videos. I will also reflect on some of the ways in which these performances call into question themes of cultural appropriation, authenticity, and ownership.

**MICHAEL AUSTIN** is Assistant Professor of Media, Journalism, and Film and founding coordinator of the Interdisciplinary Studies Program in the Cathy Hughes School of Communications at Howard University, where he teaches courses in music and audio production, media studies, and research methodology. He holds an interdisciplinary Ph.D. in Humanities - Aesthetic Studies from the University of Texas at Dallas and music degrees from UT-Austin and UT-San Antonio. Austin is editor of the anthology *Music Video Games: Performance, Politics, and Play*, and his research interests center around music and sound in contemporary media, especially in video games, music videos, social media, and other emerging technologies. He currently serves as co-Editor-and-Chief of the philosophy journal *Evental Aesthetics*. He is also an active composer/arranger/sound artist whose work has been exhibited at the Smithsonian’s Hirshhorn Gallery and Sculpture Garden, the Dallas Museum of Art, and other venues, and is an actively performing vocalist and organist.

## Using Music-Driven Video Games to Describe Musical Performances

Ryan Thompson, Michigan State University

Often, in discussing a piece of music, notational elements (that is, elements of the piece present in the sheet music) are meticulously analyzed at the expense of performative differences that arise in the case of multiple recordings. *Audiosurf* and games like it turn this convention on its head, elevating differences in performance to the forefront of conversation. Unlike *Guitar Hero*, which asks (as Kiri Miller neatly does with the title “Playing Along”) players to conflate musical and ludic performance, *Audiosurf* invites players to experience an existing performance or multiple performances of the same work in a new way, encouraging players to notice things about the recording that they might not have otherwise. Similarly, it allows for an approach to research asking how understanding the game’s music-driven mechanics might facilitate a greater understanding of the music selected to accompany them.

*Audiosurf* generates collectable elements that populate a racetrack made from a recording selected by the player. The process is not randomized at all; the game’s internal algorithms ensure that the same recording input will result in the same racetrack output. Because gameplay elements are non-random, they can be notated, and because they line up neatly with important musical elements of the piece, they can be notated using modified musical notation. Superimposing these notated gameplay elements onto an existing score of a piece of music allows for differences in performance to be discussed on equal footing with notational elements of the piece.

**RYAN THOMPSON** received his Ph.D from the University of Minnesota in December 2017. His dissertation, entitled “Interactivity in Game Audio: Instances in Which Listening Improves a Player’s Gameplay,” focuses on a soundtrack’s potential to guide and influence the actions of a player. He recently accepted a position at Michigan State University’s College of Communications Arts and Sciences teaching video game audio, 21st-century broadcasting, and the role of fandom in modern mass media culture.

Ryan has spoken at the North American Conference on Video Game Music twice previously, and has also presented at the Game Developer’s Conference, Music and the Moving Image, and the Midwest chapter meeting of the American Musicological Society. He has been featured in interviews by Game Informer and Minnesota Public Radio. Ryan is currently working on a project arguing for understanding *Final Fantasy VI* as an operatic production. He is on Twitter as @BardicKnowledge.

## “Can’t You Simply Taste the Air of Foreboding?”: Anti-Pastoral Music, Landscapes, and Immersion in *Final Fantasy XII* and *XV*

Marina Gallagher, University of British Columbia

The worlds of role-playing games (RPGs) are dotted with anti-pastoral landscapes – dark, foreboding, and often-underground areas that put gamers on edge, making them fear an ambush by monsters at every turn. But what exactly makes these landscapes so unsettling? As Zehnder and Lipscomb’s groundbreaking research has shown (2006), music undoubtedly increases player immersion in games. Jamie Madigan (*Getting Gamers*, 2016) further argues that gamers are most immersed when an area’s visual and auditory elements are aligned and correspond to

players' pre-formed expectations. The precise mechanics of this interaction between music and landscape, as well as its application to immersion in different types of landscapes in RPGs, however, have yet to be explored.

This paper therefore contends that anti-pastoral areas comprise a distinct category of landscape in RPGs and are delineated by a unique set of musical and visual features. Using *Final Fantasy XII* and *XV* (Square Enix 2006 and 2016) as examples, it traces the visual characteristics of anti-pastoral landscapes back to descriptions of the urban, technologically-advanced Rome that disrupts the pastoral countryside in Vergil's *Eclogues*. The foreboding quality of these anti-pastoral landscapes is heightened by their narrative function, namely the hero/heroine's struggles, which is rooted in the *katabasis* (descent into/return from the Underworld) of Classical epic. These ominous visual and narrative features combine with music indebted to horror film scoring, exemplified by the unusual timbres, dissonant drones, and atonal violin *glissandi* in the music for the industrial Zegnautus Keep (*Final Fantasy XV*), to simultaneously immerse and perturb gamers.

**MARINA GALLAGHER** holds a Joint Honours Bachelor of Arts in Music and Classical Studies from the University of Waterloo and is a recipient of the Governor General's Silver Medal for academic excellence. She is currently a PhD student in Musicology at the University of British Columbia and has received a Government of Canada SSHRC grant for her research into the connections between music, landscape, and immersion in the pastoral and anti-pastoral landscapes of role-playing video games (RPGs). More broadly, her research interests encompass intersections between Classical Greek and Roman literature, mythology, and music, as well as the use of musical topoi in genres such as opera, film, and video games. She also maintains a small piano studio and Travelling Troubadour Music Resources, an online store that provides activities for music classrooms. Her first novel for young adults, *Kingdom of Secrets*, was published in 2011.

### **How Musical Variation Creates Expectation in *Sonic the Hedgehog* (1991)**

Stephanie Lind, Queens University

*Sonic the Hedgehog* quickly rose to fame as the flagship game for the Sega Genesis console. Its music was composed by J-Pop musician Masato Nakamura, who stated that he composed the music with a goal of retraining the game tempo "without sounding unnatural." Despite this fact, *Sonic* is interesting because of its use of irregularity. For example, the Title Theme, while stable in its initial presentation, is repeatedly varied within the game, introducing chromaticism and polytonality that disrupt the theme's stability. One such example is the "Continue?" menu music, in which the one-bar theme of the Title Theme is repeatedly transposed up by semitone in the melody and bass, while its counter-melody remains fixed in A major. As a result, by the end of the fourth bar three different keys occur simultaneously to create a jarring dissonance that the player can only resolve by making a choice to continue or quit the game. This presentation will discuss how variation thereby creates anticipation and expectation within the game through the disruption of harmony, phrase structure, and melodic line.

Dr. **STEPHANIE LIND** is currently Associate Professor of Music Theory at the Dan School of Drama and Music, Queen's University (Canada), as well as the vice-president of the Canadian University Music Society. Her research interests include transformational theory, contemporary Canadian art music, and video game music analysis. Research contributions include articles in *Intersections*, *Music Theory Online*, *Perspectives of New Music*, as well as presentations

at numerous conferences. Most recently, she has written a chapter on diegetic music in the video game *The Legend of Zelda: Ocarina of Time* for the book *Music Video Games: Performance, Politics, and Play*, published in 2016 by Bloomsbury Press.

### **Analyzing Walking Simulators**

Elizabeth Hambleton, University of California, Santa Barbara

Video game scores are often interactive and almost always dynamic. Composers typically write in loops and modules to permit the player any timing they require during their play session. Some games do not employ such sensitivity to the player's choices and prefer a static score instead. One genre rests in the gray area between dynamic and static. Walking simulators, also termed "visual narration" or "interactive narration," are games without winning or losing or much in the way of mechanics. Without goals, danger, actions, or the need to react to anything, there is widespread discussion whether or not they qualify as "video games" at all. Indeed, they resemble virtual sound walks. Regardless of their name, they pose a problem to video game music theorists: how does one analyze a fixed score without fixed gameplay? In this paper, I will draw from soundscape and sound walk theories from Steven Feld, R. Murray Schafer, and Hildegard Westerkamp to build a foundation of analytical techniques that apply to non-virtual sound walks. Next, I will examine video game music analytical theories from Isabella van Elferen, Mark Grimshaw, Tim Summers, and other current video game music theorists. I will apply these approaches to walking simulators like *Drizzlepath* series, *Dear Esther*, *Leaving Lyndow*, and *Everybody's Gone to the Rapture* to synthesize a method of analysis for walking simulators.

**ELIZABETH HAMBLETON** is a doctoral candidate at the University of California, Santa Barbara. Her dissertation examines non-traditional notation and sonic expression in digital audio workspaces, with focus on multimedia electroacoustic works. She has presented on video game music theory at NACVGM, Ludomusicology, Music and the Moving Image, and the Symposium for Video Game Sound and Music. Hambleton has been an avid gamer for as long as she has been studying music theory, and finds the video game genre to have great potential in sophisticated art as well as practical use. In her video presentation today, she suggests how we can examine the sound design and soundscape of walking simulators despite (or because of?) their unique status as not-quite-video games.

### **Terpsichorean Vox: Hitoshi Sakimoto's Choral Synthesis in the 16-bit Era**

Kevin Burke, Florida Institute of Technology

Veteran video game composer Hitoshi Sakimoto (*Final Fantasy Tactics*, *Valkyria Chronicles*) is widely regarded for cinematic soundtracks, replete with lush strings, brilliant brass, and a diverse palette of global percussion. Indeed the sonic grandeur of Sakimoto's signature style attained critical acclaim in the 2006 blockbuster *Final Fantasy XII*, which featured a live studio recording of a symphony orchestra for the game's opening and finale.

As audio technology and sound design continue to mature and diversify, natural and sampled instruments have achieved almost indistinguishable character. It is no surprise then that Sakimoto's entry to the video game industry in the late 1980s and early 1990s is marked by timbral exceptionalism. Before achieving notoriety as a composer, Sakimoto helped game developers transition into the 16-bit era as a freelance sound programmer. His custom Terpsichorean

sound driver, named for the Ancient Greek muse of dance, offered an alternative approach to advancing sound chip technology, one that leveraged additional audio channels for timbral, rather than textural, expansion. This presentation explores two examples of choral sound synthesis in Sakimoto's soundtrack from *The Magical Chase* (1993) for the TurboGrafx-16, utilizing Wavetable Synthesis. Convincing representations of vocal timbres without the use of Pulse-Code Modulation (PCM) samples are rare to games developed for the console. As video game music tilted increasingly toward sampling and Red Book audio, the Terpsichorean sound driver's custom design surpasses expectations for 16-bit sound synthesis.

**KEVIN R. BURKE** is Director of Music Programs and Associate Professor of Music at the Florida Institute of Technology. His publications are included in *Music Research Forum*, *Ethnomusicology*, *Journal of Music History Pedagogy*, *Hybrid Pedagogy*, and *Engaging Students: Essays in Music Pedagogy*. His essay "Navigating the Edu-Tech Marketplace" will be featured in the forthcoming Norton Guide to Teaching Music History, edited by Matthew Balensuela. His recent venture into the discipline of Ludomusicology encompasses an interest in 8- and 16-bit sound architecture, particularly sound drivers, motherboard revisions, and multi-chip synthesis. He presented "Genesis Does what Nintendon't: Sound Chips and Composer Culture" and "Pushing the Envelope: Distinct Sound Drivers for the Common Famicom" at NACVGM 2016 and 2017, and delivered a longer version of today's presentation at Ludo 2017 in the U.K. He frequents many chiptune, demoscene, and retro game audio communities under the alias "Curriculum Crasher" and owns 19 SEGA Genesis consoles. Tweet @kr\_burke

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*Session VIII: Early Game Audio Analysis*

**The Well(?)-Tempered Famicom: Variations Between Tuning Systems in Famicom/NES Games**

Alan Elkins, Florida State University

Unlike the MIDI-compatible devices that first appeared in the early 80's, in which "pitch" and "pitch bend" were separated into two separate event messages, integrated circuits used in early video game sound hardware often granted access to all available microtones via the same variable, leaving the developer to manually determine their system of intonation in code. As a result, intonation in the software library of a single hardware platform, such as Nintendo's Famicom, was not necessarily standardized among developers—or even within the software of the same developer—despite the pitch content of most early video game music adhering (or attempting to adhere) to the Western system of twelve-tone equal temperament. In fact, the pitch tables in Nintendo's own first-party titles differed over the course of the system's life—a result, in part, of the inherent limitations of the hardware itself.

This paper will consider these hardware limitations, comparing the pitch tables of several Famicom and NES games to twelve-tone equal temperament at various frequencies, noting the consequences of discrepancies present in the music itself, and discussing why, in light of compositional design, developers like Nintendo may have made adjustments to pitch tables in their later titles. Additionally, other ramifications of the system's "equal access" to all microtones will be explored, including the use of deliberate intonation discrepancies to create new timbres and the apparent non-adherence of some pitched sound effects to any particular tuning system.

**ALAN ELKINS** holds degrees from Bowling Green State University (M.M., Composition) and Florida State University (B.M., Viola Performance). Formerly an instructor in music

theory, aural skills, composition, and music technology at Lee University, he has returned to Florida State to continue his graduate studies in music theory. Alan's research interests in video game music focus on the interaction of technological limitations and composition in early video game soundtracks, particularly on the Famicom/NES. He has presented previously at NACVGM on regional differences in *The Legend of Zelda's* soundtrack and on differences in polyphony and texture between Japanese-developed and Western-developed Famicom/NES titles. He is currently in the early stages of an in-depth study of the evolution of form in early video game music across multiple platforms, which intends to account for Japanese-language releases about which little has been written in English.

### **Music as Problem-Solving: Transcribing Tunes for the Atari 2600**

Andrew Schartmann, Yale University

When the Atari 2600 was released in 1977, there was no such thing as a video game composer *per se*. Sound design was left to programmers, most of whom had little or no background in music. With the Atari 2600, in particular, this lack of compositional expertise created a unique challenge for developers: although they could resort to music in the public domain, they still had to contend with the console's severely limited tuning set. (To visualize this limitation, imagine five full octaves on a piano. Now remove half of the notes at random, and detune each of the remaining pitches—some sharp-ward and some flat-ward.)

This being the case, programmers were often left with the awkward task of transcribing pre-existing tunes for an instrument that could not truly accommodate them. This paper focuses on Grieg's "In the Hall of the Mountain King," as used in the game *Mountain King* (CBS Electronics, 1983), to highlight some of the unusual ways in which programmers had to conceptualize music in order to minimize the ill effects of the transcription process. In doing so, it responds to Nick Montfort and Ian Bogost's (2009, ix) call to "[investigate]...underlying computer systems and how they enable, constrain, shape, and support the creative work that is done on them." My hope is that this paper inspires others to consider deeply how things like hardware and programming architecture influence not only the final multimedia product, but also the way in which designers perceive the creative process itself.

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### **Chiptune: Ludomusical Shaping of Identity**

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Chiptunes are musical compositions utilising the sonic qualities of microchips from 1980s and 1990s videogaming systems: fannish creativity (Sandvoss 2005), which preserves chiptune audio practices and timbral assemblages beyond 'dead media' (Sterling 2008) stasis. With its own sonic 'consistent distinctiveness' (Hodkinson 2002) in replicating the audio of specific vid-

eogaming generations, creative chiptune fans do not exclusively strive for a rigid or “authentic recreation” of the past. Rather, through fannish creativity, microchip sound becomes rejuvenated and fluidly intertextual. From Bach to Cyndi Lauper to *Doctor Who* creative chiptune fans re-contextualise and recreate existing pieces and given meanings beyond their original context, and into new narratives. How can chiptune identity be understood in relation to its musical creativity, which hybridises with other media outside of the “traditional” cultural sphere of videogaming? If, as Simon Frith states, music ‘produces’ identity (Frith 1996), what does such playful intertextuality reveal about musical creativity and identity narratives? How does such musical play produce chiptune identity and furthermore shape its temporary manifestation?

In a posthuman approach (Braidotti 2013), my paper charts the fannish utilization of chip-sound and unrelated media assemblages of musical/non-musical, human/non-human ‘actors’ (Blake and Van Elferen 2015; cf. Latour 1996) to vector the *becoming* – in the Deleuzo-Guattarian sense (1987) – of chiptune identity. Through Rosi Braidotti’s relational figuration of the nomadic subject (2012), my paper provides insight into how chiptune fans shape their fluid (sub)cultural identity through a musical play with intertextuality, time-space, and cultural boundaries to reveal chiptune identity as a ludomusical (Moseley 2017), multi-layered, complex, and largely non-unitary figuration.

**GEORGE REID** is a chiptune composer and current Ph.D. candidate in musicology at Kingston University, London. After graduating in 2014 from his Undergraduate programme in Creative Music Technology with a first class degree, George nurtured his interests in the heterogeneous and often intertextual creativity of videogame music fandoms through an MA by research, wherein he realised his academic fascination for fannish music making as a means of performing identity narratives and engendering social connections. Now exploring the relationship between fannish musicality, identity and mobility in chiptune audio culture for his Ph.D., George’s paper for the 5<sup>th</sup> North American Videogame Conference presents an overview of his current research into the complex, posthuman interconnection between fan-made chiptunes and the “becoming” of chiptune identity.