Maxwell Tfirn Ph.D.
Curriculum Vitae

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ACADEMIC POSITIONS

Christopher Newport University
Lecturer - Director of Composition & Creative Studies (2017 - Present)

EDUCATION

Ph.D.   Composition and Computer Technologies
         University of Virginia (2017)
M.A.   Music Composition
         University of Virginia (2016)
M.A.   Music Composition
         Wesleyan University (2012)
B.M.   Music Education with a Percussion Performance Certificate
         University of Florida (2009)

TEACHING EXPERIENCES

Christopher Newport University
MUSC 200 - Introduction to Music Technology (2017- present)
MUSC 315 - Aesthetics and Techniques of Music Technology (2017-present)
MUSC 411 - Post-Tonal Music Theory (Fall 2017)
MUSC 415 - Orchestration (Fall 2017 - present)
MUSC 417 - Studio Production (2018 - present)
MUSC 014 - Composition Masterclass (2017 - present)
COMP 131-432 Applied Composition (2017- present)
MUSC 104 Electronic Music Ensemble (2018-present)

University of Virginia
MUSI 2120 TA History of Jazz Music (Spring 2016)
MUSI 3390 TA Introduction to Music and Computers (Fall 2015)
MUSI 2390/3390 GA Introduction to Music and Computers (Summer 2015)
MUSI 4543 TA Computer Applications in Music (Spring 2015)
MUSI 2350 TA Technosonics (Fall 2014)
MUSI 4543 TA Sound Studio: Producer as Composer (Spring 2014)
MUSI 3390 TA Introduction to Music and Computers (Fall 2013)
MUSI 4535 TA Mobile Interactive Computer Ensemble (Spring 2013)

MUSI 2350 TA Technosonics (Fall 2012)

Wesleyan University
MUSC 202 TA Theory 2 (Spring 2012)
MUSC 109 TA Introduction to Experimental Music (Fall 2011)

Florida International University
MUC 1342 GA Introduction to Midi Technology (Spring 2011)
MUC 2302 TA Electronic Music 2 (Spring 2011)
MUS 3333 TA Sound Reinforcement (Fall 2010)

OTHER EXPERIENCES

- Digital Arts Advisor for the CNU Humanities Lab 2019 - present
- Department Represetative for LEAF (Visions of the Libral Arts Education for the 21st Century) Committee 2019 - present
- Member of the University Teacher Evaluation Committee (IDEA) 2018 - present
- Software Designer for Judith Shatin *Zipper Music* 2019
- Organize and Hosted the CNU Contemporary Music Festival 2018 - present
- Committee for IDEA Survey Support University Committee 2018 - present
- CNU recording internship coordinator 2018 - present
- Sound Engineer for Christopher Newport University Music Department 2017 - present
- Sound Engineer for CNU Theatre production of *Mr. Burns, a Post Electric Play*
- Organized and Hosted the Region III Society of Composers, Inc conference March 24-25 2017
- Organized the Christopher Newport University Young Composers Competition 2017-2018
- Liaison for Music Department Internships
- Do You Hear what I Hear presentation at Living at the Intersections Princeton University 2018
- Assistant Director of the New Music Ensemble at the University of Virginia 2016 – 2017
- Software Designer for Chris Luna's *Splatter 2016*
- Software Designer for Chris Luna's *Geyser 2016*
- Software Designer for Chris Luna's *La Torre de Chitor 2016*
- Electronics Engineer for Judith Shatin's *Black Moon* 2016 Performed at Carnegie Hall
- Assistant Director of the UVa Mobile Interactive Computer Ensemble 2013
- Assistant Director of the FIU Laptop and Electronic Arts ensemble 2010-2011

PUBLICATIONS AND RECORDINGS

- Tfirn, M. (2017). Gentle Rain on Delicate Wings[Recorded by UVa Percussion Ensemble]. On *Speed of Sound*[CD]. Charlottesville, VA: Innova
- Tfirn, M. (2014). When Will the Destruction End?[Self Recorded]. On *SEAMUS Electroacoustic Miniatures 2014: Transients* [CD]. SEAMUS Records
- Sound Notion 36: Every Light Switch Makes a Different Sound

Grants

National Science Foundation 2019 research titled Exploring Beyond Visualization: Data Sonification of Bacterial Chemotaxis Patterns
Collaborating with Dr. Roseanne Ford at the University of Virginia, this continues the research from Sonification of Bacterial Chemotaxis: Do You Here What I Here. This research furthers the research into real-time analysis and sonification possibilities of chemotactic responses of bacteria.

Research

Sonifcation and Machine Learning of Reflected Light Spectrum
Sonification takes data and turns it into something musical. The data can come from anywhere, however, what the composer does with the data greatly affects the outcome and process of the music. Using a reflected light sensor that senses 18 different bands of visible light, I have made a controller and Max/MSP to use during performance. The data given by the sensor is used for sound synthesis as well as fed into a machine learning algorithm that predicts new spectra and maps the information into musical staves. The goal of this research is to use scientific equipment and measurements in musical ways and expand upon how a performer can interact with the music. In addition this research looks at AI producing musical information as a composers assistant with the hopes of bringing new patterns, notation and spectral creativity to the composition process. (Presented at the Electro Acoustic Barn Dance 2019)

Sonification of Bacterial Chemotaxis: Do you hear what I hear?
Collaborator of Dr. Roseanne Ford (UVa Chemical Engineering), research advisor and programmer for Justin Peruzzi, recipient of a Harrison Undergraduate Research Grant to study the movement of E. Coli in a medium when an attractant is introduced. This research uses sonification of microscope video data to study chemotaxis of E.Coli. The research is currently in review for an NSF grant.

Clave Pattern
Developed a Max/MSP program for the Kubovy Perception Lab at UVA to test rhythmic identification in spoken sentences. The software plays words and rests its patterns. The task is for the subject to determine the pattern's starting point. The software also saves the answer to all trials.

TEACHING AREAS

Electroacoustic Music Composition, Acoustic Composition, Sound Synthesis, Interactive Electronics, Data Sonification, Analog Electonics, Media Art, Sound Installations, Live Sound, Recording Techniques, Music Technology, Orchestration, Music Theory, Aural Skills, Keyboard Skills, New Music Interpretation, Ensemble Direction

RELATED SKILLS

- Modular Synthesis
- Audio programming: Max/MSP, Supercollider, VCVRack, Axoloti, Csound, PVC, Open Music, Tidal Cycles, SoundHack, Spear, Praat, Iannix, Orchids, Composer Desktop Project: Soundloom
- Digital Audio Workstations: Digital Performer, Logic, Ableton Live, Reaper, Audition, Amadeus, Garage Band, Audacity, Amadeus Pro, Hydrogen
- Music Notation: Dorico, Finale, Noteability, MuseScore
- Other: Final Cut Pro, Pixel Conduit, Premiere Pro, Nodebox, Gimp, Photoshop, Illustrator

SELECTED PERFORMANCES

2020
- *Color Eyes* for Flute
  - Premiered by Robin Meiksins (https://www.youtube.com/watch?v=yaMHqQJsDYE)
- *Sound Pictures in a Lonesome mind* for Flute
  - Premiered by Robin Meiksins (https://www.youtube.com/watch?v=_WOaa2sjRFk)
- *Interruptions in an Endless Expanse* for Interactive Electronics
  - Technosonics XX, Charlottesville, VA

2019
- *Disconnected Sound Pictures* for Bassoon and Reflective Light Camera
  - Electroacoustic Barn Dance, Jacksonville University, FL
- *An Endless Reflection of Sound* for Interactive Electronics and Live Coding
  - Mansfield University New Music Festival, Newport News VA
- *When to Look at the Loss of Humanity,* Wind Ensemble and Live Electronics
  - CNU Contemporary Music Festival, Newport News VA
- *Noise Book* for Interactive Electronic Ensemble
  - CNU Contemporary Music Festival, Newport News VA
- *Apophenia* for Live Coding Ensemble
  - CNU Contemporary Music Festival, Newport News, VA
  - CRISP Ensemble, Newport News VA
- *Sigh Interrupt Cycle*, Fixed Media
  - ICMC NYU, New York, NY
  - SEAMUS Berklee, Boston MA
  - CNU Contemporary Music Festival, Newport News, VA
- *Unstable Revolutions,* 5 Trumpets and Fixed Media

- CNU Trumpet Festival, Newport News Va

2018
- *Apophenia,* Live Coding Ensemble
  - CNU Electronic Music Ensemble concert, Newport News VA
- *Sigh Interrupt Cycle,* Fixed Media
  - Electroacoustic Barn Dance, Jacksonville University, FL
- *Invisible Signals* for Open Instrumentation, Electromagnetic Microphone and Computer
  - Society of Composers Region III, Christopher Newport University, VA
- *Foundling,* Wind Ensemble
  - Christopher Newport University, VA
- *Establish Corrupt Broken,* Fixed Media
  - Electroacoustic Barn Dance, Jacksonville University, FL
  - ICMC, Degu, South Korea

2017
- *Definite Failure* for Solo Instrument and Computer Generated Score
  - Digitalis, University of Virginia, VA
- *Establish, Corrupt, Broken* for Fixed Media
  - National Students in Electronic Music Event, Louisiana State University, LA
- Garden of Temptation and Being
  - Society of Electro Acoustic Music in the United States, St. Cloud State University, St. Cloud, MN

2016
- *Establish, Corrupt, Broken* for Fixed Media
  - University Tea Time Recital, Charlottesville, VA
- *From Noise Comes Being* for Axoloti, Computer and Analog Electronics
  - Electroacoustic Barn Dance, University of Mary Washington, Fredericksburg, VA
- *Invisible Signals* for Open Instrumentation, Electromagnetic Microphone and Computer
  - Technosonics XVII, University of Virginia, Charlottesville, VA
  - University Tea Time Recital, Charlottesville, VA
- *No Harm Shall Come to Others*
  - A Concert of Electroacoustic, Electronic and Multimedia Works, University of International Business and Economics, Beijing, China
- *Thixotropy* for 2 Computers or Assortment of Electronics
  - TomTom Festival, Charlottesville, VA
  - Digitalis, Charlottesville, VA
- *The Body of Sound* for 2 Computers
  - TomTom Festival, Charlottesville, VA
- *Cherry Blossom & Blood* for Mixed Ensemble and Interactive Computer
  - University of Virginia New Music Ensemble, Charlottesville, VA
- *Inter Diabolus et Virgo* for Interactive Computer
  - Hack Cville, Charlottesville, VA

- *Dying Stars Bring Light to a Dark Sky* for Fixed Media
  - Society of Composers Regional Conference, Marshall University, Huntington, WV
- *5 Image Interpretations* for String Quartet
  - Jack Quartet, University of Virginia
- *Burning Shrine Crumbles* for Multi Percussion Duet
  - Kenneth Broadway Faculty Recital, University of Florida, Gainesville, FL

2015
- *Lament to Millions of Lost Souls* for Fixed Media
  - Technosonics XVI, University of Virginia, Charlottesville, VA
- *Tri Voice Duality* for Voice Trio
  - Bucknell University, Lewisburg, PA
- *Dying Stars Bring Light to a Dark Sky* for Fixed Media
  - Electroacoustic Barn Dance, University of Mary Washington, Fredericksburg, VA
- *Inter Diabolus et Virgo* for Interactive Computer
  - South Central Graduate Music Consortium, University of Virginia, Charlottesville, VA
- *Life of Astronaut* for Interactive computer and narration
  - Digitals, University of Virginia, Charlottesville, VA
  - TomTom Festival, Charlottesville, VA
- *The Garden* for Baritone Voice, Trombone, Bass Clarinet and Trumpet
  - Loadbang, University of Virginia, Charlottesville, VA
- *Burning Shrine Crumbles* for Multi Percussion Duet
  - Society of Composers National Conference 50th Anniversary, Gainesville, FL
  - Meehan, Perkins, University of Virginia, Charlottesville, VA
- *When Chaos Shrouds Utopia* for Solo Multi Percussion
  - I-Jen Fang, University of Virginia, Charlottesville, VA
- *The Conception of Chaos* for Saxophone Quartet
  - Fifteen Minutes of Fame performed by New Thread Quartet, New York, NY

2014
- *91o(X) F[+X]F[-X]+X* for Interactive Computer
  - International Computer Music Conference, Athens, Greece
- *Story of My Lover* for Voice and Live Electronics,
  - Digitalis, University of Virginia, Charlottesville, VA
  - UVa Composers Showcase, University of Mary Washington, Fredericksburg, VA
- *Limited Aggregation* for Multi Percussion and Computer
  - Technosonics XV, University of Virginia, Charlottesville, VA
- *Pain as Told by the Prophet* for SATB Voice
  - Ekmeles, University of Virginia, Charlottesville, VA
- *Shifting Spaces* for Piano
  - Seung-Hye Kim, University of Virginia, Charlottesville, VA

2013
- *Broken Skyline, Horizontal and Vertical Views, Abstract Overlay* for Fixed Media and Video

- VAST Exhibition, Venice, Italy
- *Purgatory* for Bassoon
  - South Central Graduate Music Consortium, Duke University, Durham, NC
  - Tea Time Recital, University of Virginia, Charlottesville, VA
- *No Harm Shall Come to Others* for Fixed Media
  - National Students in Electronic Music Event, Temple University, Philadelphia, PA
  - Electroacoustic Barn Dance, University of Mary Washington, Fredericksburg, VA
- *15o(A)A+C[F], F+[D]-[G+A]F, A-[F+C]+B, F<F[FA], F+<A-B[C+D], D[A-F]<E, E<[A]+F[B-D]* for Interactive Computer
  - Digitalis, University of Virginia, Charlottesville, VA
- *Entanglement* for Electric Guitar Quartet
  - Dither, Christ Episcopal Church, Charlottesville, VA

2012
- *91o(X)F[+X]F[-X]+X* for Interactive Computer
  - Issue Project Room Share, Brooklyn, NY
- *A Meeting of Florets* for Prepared Piano
  - Graduate Recital, Wesleyan University, Middletown, CT
- *Florets* for Laptop Ensemble
  - Issue Project Room Share, Brooklyn, NY
  - Graduate Recital, Wesleyan University, Middletown, CT
- *Meditation of a Tree* for Fixed Media
  - Graduate Recital, Wesleyan University, Middletown, CT
  - Florida Electro Acoustic Student Festival, Florida International University, Miami, FL
  - Graduate Recital, Wesleyan University, Middletown, CT
- *Dystopia* for Laptop Ensemble
  - Technosonics XIII, University of Virginia, Charlottesville VA
  - Humanities Week at Dawsons Row No.2, University of Virginia, Charlottesville, VA
- *32o(F+F) F[+F][-F]F[-F-F][+F]F]* for Interactive Electronics
  - South Central Graduate Music Consortium, University of Virginia, Charlottesville, VA
  - Graduate Recital, Wesleyan University, Middletown, CT
  - Society of Electro Acoustic Music in the United States, Lawrence University, Appleton, WI
- *Sounds of Auditory Hallucination* for Voice and Interactive Computer
  - Graduate Recital, Wesleyan University, Middletown, CT

2011
- *Meditation of a Tree*
  - Graduate Composers Recital, Wesleyan University, Middletown, CT
  - Wesleyan University Center of the Arts, Wesleyan University, Middletown, CT
- *Dystopia* for Laptop Ensemble
  - 12 Nights Festival of Electronic Music and Arts Series, Miami, FL
- *32o(F+F) F[+F][-F]F[-F-F][+F]F]* for Interactive Computer

- o   Graduate Composers Recital, Wesleyan University, Middletown, CT
- o   Electro-Bonanza, Florida International University, Miami, FL
- *Sounds of Auditory Hallucination* for Voice and Interactive Computer
  - o   Subtropics Music Festival, Miami, FL
  - o   FIU Composers Recital, Florida International University, Miami, FL

2010
- *Sounds of Auditory Hallucination*
  - o   Electro-Bonanza, Florida International University, Miami, FL

2009
- *The Village of Small People and Animals* for Flute and Bass Flute
  - o   University of Florida Society of Composers Chapter, Gainesville, FL
- *Week* for Fixed Media
  - o   Florida Electro Acoustic Student Festival, Florida International University, Miami, FL

INSTALLATIONS

2016
- *Audio Faces*, Dell Building 1, University of Virginia, Charlottesville, VA

2015
- *Reflective Catacombs,* Technsonics XVI, University of Virginia Old Cabell Hall Catacombs, Charlottesville, VA

2014
- *Reflective Tunnel,* Society for Electro-Acoustic Music United States, Wesleyan University Tunnels, Middletown, CT

2012
- Circuit Bent Jungle sound installation, Florida International University, Miami, FL

OTHER PRESENTATIONS

2019
- Sonifying Reflected Light Through Machine Learning and Sound Synthesis
  - o   Electro Acoustic Barn Dance, Jacksonville University

SELECTED COMPOSITIONS

Color Eyes for Flute (2020) ~5:00-7:00
Sound Pictures in a Lonesome Mind for flute (2020) ~5:00-7:00
Interruptions in an Endless Expanse for Interactive Electronics (2020) ~20:00
Disconnected Sound Pictures for Bassoon and Reflective Light Camera (2019) ~5:00-7:00
An Endless Reflection for Sound for Interactive Electronics and Live Coding (2019)~20:00
When to Look at the Loss of Humanity for Wind Ensemble and Live Electronics (2019) ~7:00
Unstable Revolutions for 5 Trumpets, Fixed Media and Video (2019) 6:45
Apophenia for Live Coding Laptop Ensemble (2018) ~8:00-9:00
Sigh Interrupt Cycle for Fixed Media (2018) 7:00
Founding for Wind Ensemble and Soprano (2017) 8:00
Definite Failure for Solo Saxophone and Live Score Generation (2017) 7:00-10:00
Invisible Signals for Open Instrumentation, Computer and Electromagnetic Microphone (2016) ~10:00
From Noise Comes Being for Interactive Electronics (2016) ~7:00
Establish, Corrupt, Broken for Fixed Media (2016) 7:37
Thixotropy collaborated with Veronica Lam, for 2 People with Electronics (2016) ~10:00
Cherry Blossom & Blood for Open Instrumentation, Narrator and Computer (2016) ~ 8:00
5 Image Interpretations for String Quartet (2015) ~ 7:00
Lament to Millions of Lost Souls for Fixed Media (2015) 120:00
Inter Diabolus et Virgo for Interactive Computer (2015) ~8:00
The Garden for Bass Clarinet, Trumpet, Bass Trombone and Baritone Voice (2015) 5:34
Dying Stars Bring Light to a Dark Sky, Fixed Media (2014) 5:27
Limited Aggregation collaborated with Seung-Hye Kim for Multi Percussion and Computer (2014) 8:14
Burning Shrine Crumbles for Percussion Duet (2014) 5:30
When Chaos Shrouds Utopia for Multi-percussion (2014) ~8:00
When Will the Destruction End? Fixed Media (2014) 1:02
The Conception of Chaos for Saxophone Quartet (2014) 1:00
Shifting Spaces for Solo Piano (2014) 7:04
Traversing Eternity for Piano, Violin, Cello and Computer (2013) 24:00
Small Groups of People Bring Collapse for Laptop Ensemble (2013) 6:45
Pain as Told by the Prophet for Voice Quartet and Computer (2013) 8:05
Purgatory for Solo Bassoon (2013) 8:00
X>pow(10,-4) for Fixed Media (2013) 2:08
No Harm Shall Come to Others for Fixed Media (2012) 7:04
Entanglement for Guitar Quartet (2012) 7:24
91$_∘$(X)F[+X]F[-X]+X,F for Interactive Computer (2012) Time Range 5:00 – 15:00
Meditation of a Tree for Fixed Media (2011) 9:50
32o(F+F) F[+F][-F]F[-F[-F]][+F]F for Interactive Computer (2010) Time range 5:00 – 15:00

PROFESSIONAL MEMBERSHIPS

Society of Composers, Inc (SCI)
Society of Electro-Acoustic Music in the United States (SEAMUS)

American Composers Forum
Broadcast Music Incorporated
Vox Novus