

## WILLIAM ANDREW BURNSON

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### EDUCATION

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<b>D.M.A. candidate, Music Composition</b>	present
Doctoral project: <i>Formalizing the Visual Grammar of Music Notation</i> University of Illinois at Urbana-Champaign (UIUC)	
<b>M.M. Music Composition</b>	2009
University of Illinois at Urbana-Champaign	
<b>B.M. Music Composition</b>	2007
<i>Magna Cum Laude</i> Thesis: <i>Dmitri Shostakovich and 1-5-6-5: The History of a Motive 1950-1967</i> Bucknell University, Lewisburg, PA Fulfilled requirements for B.A. Russian Semester abroad CIEE/St. Petersburg State University, Russia	
	2005

### TEACHING EXPERIENCE

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<b>Music Technology Instructor</b>	Summers 2011-2012
Illinois Summer Youth Music Camp, UIUC Taught fundamentals of music technology and software applications such as Audacity, GarageBand, Logic Pro, and Sibelius to high school and middle school students.	
<b>Teaching Assistant</b>	Spring 2010
Aural Skills IV, School of Music, UIUC Taught undergraduate music majors advanced chromatic and atonal aural skills.	
<b>Instructor and Course Designer</b>	Fall 2009
"Mentor Reach" music theory mentoring program, School of Music, UIUC Designed new course and online scheduling system to pair undergraduate students with peer mentors. Met with students weekly to discuss experiences and approaches to teaching music theory one-on-one with their peers.	
<b>Instructor</b>	Spring 2009
Rudiments of Music Theory for Non-Majors, School of Music, UIUC Taught the fundamentals of music score reading and music theory to undergraduates outside the School of Music.	

- Teaching Assistant** Fall 2008  
 Music Theory and Practice II, School of Music, UIUC  
 Taught core principles of music theory to undergraduate Music majors.
- Teaching Assistant** Fall 2008  
 Aural Skills II, School of Music, UIUC  
 Developed student abilities in ear-training and dictation in a group discussion session.
- Teaching Assistant** Spring 2008  
 Music Theory and Practice I, School of Music, UIUC  
 Taught core principles of music theory to undergraduate Music majors.
- Teaching Assistant** Spring 2008  
 Aural Skills I, School of Music, UIUC  
 Developed student abilities in ear-training and dictation in a group discussion session.
- Teaching Assistant** Fall 2007  
 Music Theory and Practice III, School of Music, UIUC  
 Taught core principles of music theory to undergraduate Music majors.
- Teaching Assistant** Fall 2007  
 Aural Skills III, School of Music, UIUC  
 Developed student abilities in ear-training and dictation in a group discussion session.

## PROFESSIONAL EXPERIENCE

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- CAMIL Labs Administrator** 2010–present  
 School of Music, UIUC
- Administrator for CAMIL (Computer Assisted Music Instruction Laboratory), a 37 machine two-room lab with a dedicated server used for teaching music and media technology in several music and FAA courses. In 2011, planned and led implementation lab renovation to improve the student and teacher experience and incorporate state-of-the-art digital audio technology.
- McFarland Bell Tower Administrator** 2009  
 UIUC
- Developed calibration software to optimize playback on the McFarland Carillon.

## AWARDS

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<b>Winner 13th Annual 21st Century Piano Commission Competition</b> UIUC	2012
<b>List of Teachers Ranked as Excellent</b> UIUC	Spring 2010 Spring 2008 Fall 2008
<b>Honorable Mention, Museum of Computer Art (MOCA)</b> In Digital III Exhibit for <i>Bike Ride</i> graphic score	2010
<b>Barbara Watson Grever Prize for Outstanding Musicianship</b> Bucknell University	2007
<b>Phi Beta Kappa Award for Conspicuous Achievement in Scholarship</b> Bucknell University	2007
<b>First Place, Website Design Contest</b> Bucknell University	2006

## INVITED PRESENTATIONS

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- “Harmonia: a Multimedia Platform for Music Theory,” Composition Forum, UIUC, 2013
- “Chorale Composer: A tool for the 21st-century music learner,” ATMI Conference, San Diego, 2012
- “Music Notation as Music Composition,” Music in Culture: Bucknell Alumni Colloquium Series, Bucknell University, 2011. Three slides incorporated into MIT OpenCourseWare for course 21M.269, Lecture 1, pp. 24-26.
- “Brick: Tools for High-Fidelity Resampling, Pitch Shift, and Filtering,” Composition Forum, UIUC, 2011

## PUBLICATIONS

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- “Introducing Belle, Bonne, Sage,” International Computer Music Conference 2010, NYC, 4pp.
- “Automatic Notation Of Computer-Generated Scores For Instruments, Voices And Electro-Acoustic Sounds,” International Computer Music Conference 2010, NYC, 4pp.
- “Software for Teaching Music Theory,” International Computer Music Conference 2009, Montreal, 4pp.

## MUSICAL COMPOSITIONS

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- Self-Destruct*** 2012  
for piano and alto sax, 3'  
Commissioners: Casey Gene Dierlam and Drew Whiting, "Birthday Cards for John Cage"  
Performances by commissioners:
- October 1, 2012, Music Building Auditorium, UIUC
  - October 3, 2012, SVS Recital Hall, Grand Valley State University
  - October 5, 2012, Pusey Room, Lawrence University
  - October 7, 2012, Seretean Center, Oklahoma State University
- Steal This Piece*** 2012  
a web-generated work for large ensemble, 11'  
Commissioner: Illinois Modern Ensemble  
Premiered March 15, 2012, Foellinger Great Hall at UIUC
- those three the's and and's, those an's, that. . .*** 2012  
a read-along for piano and distributed paperback books, 17'  
Commissioner: 13th Annual 21st Century Piano Commission Competition  
Performances:
- Casey Gene Dierlam, February 8, 2012, Foellinger Great Hall, UIUC (premiere)
  - Casey Gene Dierlam, April 10, 2012, Music Building Auditorium, UIUC
- What I'm about to tell you*** 2011  
for piano and electroacoustic accompaniment, 9'  
Commissioner: Experimental Music Studios at UIUC  
Recorded by Casey Gene Dierlam for *Measures of Change (recently completed compositions by graduate composers at the Experimental Music Studios of the University of Illinois at Urbana-Champaign)*  
Performances:
- Casey Gene Dierlam, February 8, 2012, Foellinger Great Hall, UIUC
  - Casey Gene Dierlam, February 23, 2012, Music Building Auditorium, UIUC
  - Radio play, March 5, 2013, WOBC 91.5 FM
- FIXATIONS*** 2010  
a cycle of ten movements for the black-and-white keys, 35'  
Performed in excerpt:
- Barry Hannigan, January 28, 2011, Bucknell University
  - Barry Hannigan, February 6, 2011, Mansfield University
  - Barry Hannigan, February 7, 2011, Zug Recital Hall, Elizabethtown College
  - Casey Gene Dierlam, February 8, 2012, Foellinger Great Hall, UIUC
  - Christin Cooper, April 1, 2012, Antresian Gallery, Baltimore, Maryland
  - Barry Hannigan, April 8, 2013, University of Oregon
  - Barry Hannigan, April 13, 2013, Pomona College, Claremont, California

***Rail Roa Di Ana*** 2009  
for double piano trio, 9'

Performances:

- May 1, 2009, Smith Hall, UIUC
- Radio play, October 3, 2009, Modbit.com/WEFT Champaign 90.1 FM
- November 13, 2010, Society of Composers Inc. National Conference, Columbia, South Carolina
- February 8, 2012, Foellinger Great Hall, UIUC

***Reflex*** 2009  
for stereo playback, 5'

Performances:

- September 26, 2009, Foellinger Great Hall, UIUC
- Radio play, October 3, 2009, Modbit.com/WEFT Champaign 90.1 FM

***Incandescence*** 2008  
fractal synthesis for stereo or multichannel playback, 4'

Performances:

- May 1, 2009, Smith Recital Hall, UIUC

***Bike Ride*** 2007  
for graphic score and piano, 2'

Performances:

- Barry Hannigan, January 28, 2011, Bucknell University
- Barry Hannigan, February 6, 2011, Mansfield University
- Barry Hannigan, February 7, 2011, Zug Recital Hall, Elizabethtown College
- Casey Gene Dierlam, February 8, 2012, Foellinger Great Hall, UIUC
- Barry Hannigan, April 8, 2013, University of Oregon
- Barry Hannigan, April 13, 2013, Pomona College, Claremont, California

## SOFTWARE DEVELOPMENT

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**Harmonia** 2010–present  
UIUC

Principle Investigator: Assoc. Prof. Heinrich Taube of Music Composition-Theory

Harmonia is a multimedia music theory platform that combines notation, automatic analysis and grading, word processing, and multimedia playback. The goal of Harmonia is to replace paper-based music theory with enriched PDF documents that allow music content to be created, edited, searched, annotated, automatically analyzed and graded, all within a user-friendly interface. *Available on the Mac App Store.*

Funding by:

- Provost Initiative for Teaching Advancement (PITA)
- Research Board, designated Arnold O. Beckman Award

**Music Information Concept Archive (MICA)** 2012–present  
Developed independently  
Open Source License: BSD 2-clause

The *MICA* project aims to standardize the encoding of musical concepts in a language-agnostic and international way to enable music to be shared and studied digitally. It is modeled off the successes of the Unicode and MIDI standards.

**Belle, Bonne, Sage** 2007–present  
Developed independently  
Open Source License: BSD 2-clause

*Belle, Bonne, Sage* is a C++ vector-graphics library that bridges an arbitrary language of music notation input to another language of graphical output. The primary goal of *Belle, Bonne, Sage* is to provide a flexible and portable library that addresses music notation in a general way.

**prim.cc** 2007–present  
Developed independently  
Open Source License: BSD 2-clause

*prim.cc* is a minimalist alternative to the C++ standard library with 50+ classes for many common programming tasks, and it is used by most of the software projects listed above.

**Brick** 2011  
Developed independently  
Open Source License: LGPL

*Brick* is an audio resampler and pitch-shifter that aims to provide the highest possible conversion quality attainable by desktop computers. It is used primarily by audiophiles and student composers in the Experimental Music Studios at UIUC.

**DISSCO** 2010–2011  
UIUC  
Principle Investigator: Prof. Sever Tipei of Music Composition-Theory  
Open-Source License: LGPL

DISSCO is a digital instrument for sound synthesis and composition. Improvements made include extending DISSCO to produce multi-tempo music notation files.

Funding by:

- Research Board

## **Chorale Composer**

2008–2010

UIUC

Principle Investigator: Assoc. Prof. Heinrich Taube of Music Composition-Theory

Chorale Composer is a music theory application that provided real-time editing, analysis, and grading of four-part harmony. Chorale Composer was used in music theory classes taught at UIUC. This software became the basis of Harmonia.

## **SKILLS**

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### **Musical Instrument**

Piano

### **Audio and Music Software**

Audacity, Digital Performer, Pro Tools, Sibelius

### **Computer Languages**

Bash, C++, HTML/CSS, JavaScript, Lua, Mathematica, Objective-C, PHP, Python

### **Operating Systems**

iOS, Linux, Mac OS X, Windows

## **INTERESTS**

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Contemporary art music and aesthetics, open-source software development, music notation, digital signal processing, sonification, typography, vector graphics, web design