Brooklyn College
of
The City University of New York

PROPOSAL TO ESTABLISH A GRADUATE PROGRAM IN MASTER OF FINE ARTS (M.F.A.)
DEGREE IN SONIC ARTS

ANTICIPATED START DATE: FALL 2016

SPONSORED BY COSERVATORY OF MUSIC
SCHOOL OF VISUAL, MEDIA
AND PERFORMING ARTS

APPROVED BY:

Date of Department Approval: October 14, 2015

Date of Faculty Council Approval: November 11, 2015

College Representative: Dr. Karen L. Gould, President
Brooklyn College of The City University of New York

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Provost's Signature: [Signature]
Provost's Name: Dr. William A. Tramontano
## Task 1: Institution and Program Information

### Institution Information

<table>
<thead>
<tr>
<th>Institution Name:</th>
<th>Brooklyn College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution Code (6 digits):</td>
<td>331000</td>
</tr>
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</table>

**The name and code of the institution should reflect the information found on the Inventory of Registered Programs**

<table>
<thead>
<tr>
<th>Institution Address:</th>
<th>2900 Bedford Avenue</th>
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<tbody>
<tr>
<td>City:</td>
<td>Brooklyn</td>
</tr>
<tr>
<td>State/Country:</td>
<td>NY</td>
</tr>
<tr>
<td>Zip:</td>
<td>11210</td>
</tr>
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**Regents Regions:**

| New York City                |                                             |

Specify campus(s) of the institution where program is offered, if other than the main campus:

**The name and code of the location(s) should reflect the information found on the Inventory of Registered Programs**

Specify any other additional campus(s) where the program is offered besides the ones selected above:

<table>
<thead>
<tr>
<th>Steiner Studios</th>
<th>25 Washington Avenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brooklyn, NY 11205</td>
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20% of classes, 12 credits

If any courses will be offered off campus, indicate the location and number of courses and credits:

<table>
<thead>
<tr>
<th>If the program will be registered jointly with another institution, please provide the partner institution's name:</th>
<th>Steiner Studios</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25 Washington Avenue</td>
</tr>
<tr>
<td></td>
<td>Brooklyn, NY 11205</td>
</tr>
<tr>
<td></td>
<td>20% of classes, 12 credits</td>
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Program Information for New Programs

<table>
<thead>
<tr>
<th>Program Title:</th>
<th>Masters of Fine Arts in Sonic Arts</th>
</tr>
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<tbody>
<tr>
<td><strong>Degree Award:</strong></td>
<td>MFA</td>
</tr>
<tr>
<td><strong>HEGIS code:</strong></td>
<td>1004.10</td>
</tr>
<tr>
<td><strong>Number of Credits</strong>*:</td>
<td>60</td>
</tr>
</tbody>
</table>

* If the program contains multiple options or concentrations that affect the number of program credits, list the total number of program credits required for each option:

<table>
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<tr>
<th>Option/Concentration Name:</th>
<th>Credits:</th>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If program is part of a dual degree program, provide the following information:

| Program Title: | |
|----------------||
| **Degree Award:** | |
| **HEGIS code:** | |

Section III. Contact Information

<table>
<thead>
<tr>
<th>Name of contact person</th>
<th>Maria Ann Conelli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of contact person:</td>
<td>Dean, School of Visual, Media &amp; Performing Arts</td>
</tr>
<tr>
<td>Telephone</td>
<td>718-951-3180</td>
</tr>
<tr>
<td>Fax:</td>
<td>718-951-3188</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:mconelli@brooklyn.cuny.edu">mconelli@brooklyn.cuny.edu</a></td>
</tr>
</tbody>
</table>
### Task 2 - Proposed Program Information

Guidance for this task can be found by clicking here: [Department Expectations: Admissions, Academic Support Services, Credit for Experience and Program Assessment and Improvement](#)

Relevant Regulations for this task can be found by clicking here: [Relevant Regulations for Task 2](#)

#### a. Program format

Check all scheduling, format, and delivery features that apply to the proposed program. Unless otherwise specified below, it is assumed the proposed program may be completed through a full-time, day schedule. Format definitions can be found by clicking here: [Format Definitions](#)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tr>
<td>Evening</td>
<td>All requirements for the award must be offered during evening study.</td>
</tr>
<tr>
<td>Weekend</td>
<td>All requirements for the award must be offered during weekend study.</td>
</tr>
<tr>
<td>Evening/Weekend</td>
<td>All requirements for the award must be offered during a combination of evening and weekend study.</td>
</tr>
<tr>
<td>Day Addition</td>
<td>For programs having EVENING, WEEKEND, or EVENING/WEEKEND formats, indicates that all requirements for the award can also be completed during traditional daytime study.</td>
</tr>
<tr>
<td>Not Full-Time</td>
<td>The program cannot be completed on a full-time basis, e.g., an associate degree that cannot be completed within two academic years. Such programs are not eligible for TAP payments to students.</td>
</tr>
<tr>
<td>5-Year baccalaureate</td>
<td>Indicates that because of the number of credits required, the program is approved as a 5-year program with five-year State student financial aid eligibility.</td>
</tr>
<tr>
<td>4.5 Year baccalaureate</td>
<td>Indicates that because of the number of credits required, the program is approved as a 4.5-year program with 4.5-year State student financial aid eligibility.</td>
</tr>
<tr>
<td>Upper-Division</td>
<td>A program comprising the final two years of a baccalaureate program. A student cannot enter such a program as a freshman. The admission level presumes prior completion of the equivalent of two years of college study and substantial prerequisites.</td>
</tr>
<tr>
<td>Independent Study</td>
<td>A major portion of the requirements for the award must be offered through independent study rather than through traditional classes.</td>
</tr>
<tr>
<td>Cooperative</td>
<td>The program requires alternating periods of study on campus and related work experience. The pattern may extend the length of the program beyond normal time expectations.</td>
</tr>
<tr>
<td>Distance Education</td>
<td>50% or more of the course requirements for the award can be completed through study delivered by distance education.</td>
</tr>
<tr>
<td>External</td>
<td>All requirements for the award must be capable of completion through examination, without formal classroom study at the institution.</td>
</tr>
<tr>
<td>Accelerated</td>
<td>The program is offered in an accelerated curricular pattern which provides for early completion. Semester hour requirements in Commissioner’s Regulations for instruction and supplementary assignments apply.</td>
</tr>
<tr>
<td>Standard Addition</td>
<td>For programs having Independent, Distance Education, External, OR Accelerated formats, indicates that all requirements for the award can also be completed in a standard, traditional format.</td>
</tr>
<tr>
<td>Bilingual</td>
<td>Instruction is given in English and in another language. By program completion, students are proficient in both languages. This is not intended to be used to identify programs in foreign language study.</td>
</tr>
<tr>
<td>Language Other Than English</td>
<td>The program is taught in a language other than English.</td>
</tr>
<tr>
<td>Other Non-Standard Feature(s)</td>
<td>Please provide a detailed explanation.</td>
</tr>
</tbody>
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Master of Fine Arts in Sonic Arts

Abstract

This proposal is a request to establish a Master of Fine Arts in Sonic Arts at Brooklyn College of The City University of New York (CUNY) in the School of Visual, Media and Performing Arts.

The M.F.A. in Sonic Arts program will address the growing field of music and technology with a degree program that addresses our graduate students’ needs for productive professional lives in the commercial media world. The technologies of music composition, performance, and dissemination have seen radical developments in recent years. The continuing phenomenal increase in computer power, as well as the influential innovations it has brought—such as the Internet, MP3 files, and the iPod—has contributed to significant changes of both musical culture and musical style during this period.

Requiring 60 graduate credits over the course of 2 years, 48 of which represent the program’s common core, the students are able to choose the remaining 12 credits from a list of elective courses, allowing them to tailor their programs to their specific educational and professional needs.

Executive Summary

Overview

The Conservatory of Music at Brooklyn College proposes to establish a graduate course of study culminating in the Master of Fine Arts in Sonic Arts. This degree program will offer students advanced knowledge in the production of artistic and commercial works of sound. The intended audience includes electroacoustic composers, other electronic music composers, sound artists, and sound designers.

Need for the Graduate Degree and Employment Opportunities

With the dramatic developments in music technologies as it relates to composition, performance, and dissemination there is a critical demand for a degree program that trains today’s musician to compete in the new and changing fields. Recent innovations have are constantly contributing to significant changes in our musical culture and musical style. It is imperative that we offer degrees pertinent to these changes and in line with new job opportunities.

The ability to specialize in music is increasingly important as job opportunities are defined in new ways. Some common areas of expertise include Sound Design, Audio Design, and Digital Media Design to name a few. A degree in Sonic Arts encompasses these job titles and creates an advantage for our students that a degree in composition alone may not foster.
Key Curriculum

The four-tier curriculum model we have developed will prepare students for the contemporary workplace, building their skills in (1) theoretical knowledge, (2) historical perspectives, (3) creativity and analysis, and (4) technical expertise. This program will prepare students for the contemporary and rapidly changing workplace.

Faculty

The core faculty will be comprised of Brooklyn College Conservatory of Music and the TV/Radio Department composition and technology professors. In addition, we recommend one shared full-time CLT to administrate and coordinate the technology for this program and the MFA in Media Scoring, and one shared full-time faculty with Media Scoring.

Finance

The M.F.A. program in Sonic Arts will require a level of support consonant with the high standard of professional training that we seek to provide. However, with the income generated from tuition and course lab fees and the existing faculty already in place for the core curriculum, it will not require exceptional resources.

Program Start Date

The anticipated date for admitting the first cohort of students into the Master of Fine Arts in Sonic Arts is Fall 2016.

Conclusion

Established to provide promising musical artists an opportunity to acquire an advanced degree, experience, and opportunities for work in digital music, the M.F.A. in Sonic Arts addresses the contemporary commercial music profession in a way a traditional Western European Art Music degree cannot. The program is constructed for students with a desire to work primarily in digital media, and is available to students with bachelor’s degrees in music and digital media, as well as to those extraordinary talented musicians who do not have bachelor’s degrees, but who possess the background and experience necessary to succeed in the program.
Introduction

The Conservatory of Music at Brooklyn College proposes to establish a graduate course of study culminating in the Master of Fine Arts in Sonic Arts. This degree program will offer students advanced knowledge in the production of artistic and commercial works of sound. The intended audience includes electroacoustic composers, other electronic music composers, sound artists, and sound designers. The anticipated date for admitting the first cohort of students is Fall 2016.

The primary goal of the program is to develop historically and theoretically-informed, technically skilled composers and artists working in the medium of sound. Graduates of this program will be capable of pursuing successful careers in the arts and commercial media industry in New York and beyond. Students will complete a total of 60 credits over the course of two years, will participate in activities of the Brooklyn College Conservatory, its Center for Computer Music, and the graduate programs in Performance and Interactive Media Arts (PIMA), and will make use of its facilities, including Steiner Studios which houses the new Graduate Program in Cinema Arts and Studies.

This program has been designed to provide an academic route to promising composers and artists, primarily those working in digital media, including those who may not necessarily possess a bachelor’s degree in music. With the development of electronic and computer-based music instruments during the past century, it is now possible for musicians to work with sound in a manner more akin to sculpture than to composition for acoustic instruments. Most university music programs are oriented toward the Western European musical tradition, and graduate work nearly always requires a bachelor’s degree in music. The Brooklyn College Sonic Arts M.F.A. will welcome students with the bachelor’s degree in music but also the underserved population of creative and promising students without it. Sonic Arts program will help hone the digital music skills of all students to a high professional level.

Consonant with the University’s commitment to access and excellence, the Sonic Arts program will attract students who reflect the cultural breadth of the United States. With a focus on innovative technologies and approaches in the realm of sound it will be positioned to nurture creative voices that would not otherwise be heard.

I. Purpose and Goals

The technologies of music composition, performance, and dissemination have seen radical developments in recent years. The continuing phenomenal increase in computer power, as well as the influential innovations it has brought—such as the Internet, MP3 files, and the iPod—has contributed to significant changes of both musical culture and musical style during this period. Today the computer itself is the newest instrument, and it has opened a host of exciting new musical opportunities for performers, composers, musicologists, and music educators. The possibilities open even further for those who learn the essentials to build their own computer software and hardware tools and instruments, something quite attainable, even for students. Expertise in these technology-based tools will provide an intriguing gateway to collaborations with scholars in Computer Science, Engineering, Mathematics, Psychology, Physics, Business, and other areas. Furthermore, many computer
instruments and compositions inspire multimedia collaborations with other art forms, such as video, film, dance, theater, performance art, and sculpture.

Our goal is to create an environment where students of diverse backgrounds and interests share a curriculum that examines theory, history, and technique but without dictating specific career paths. We would welcome students interested to pursue careers in sound design, music composition for concert performances, and sound art, as well as composition for video games, animation, multimedia, and other commercial venues. Whatever the specialization, our focus would be on highly-motivated and promising students who wish to be creators with digital sound, and not primarily technicians. We would not require that incoming students have an undergraduate degree in music, but would screen them for essential competencies in music and digital audio creation. We would reach out to regional arts and commercial organizations to help place students into internship opportunities. For curricular details, please see the draft curriculum for this degree below. We anticipate enrolling ten students per year in this program.

II. Need

The focus on digital technology within instructional, creative, performance, and commercial venues continues to increase. Similarly, employment prospects for technically proficient composers and sound artists/designers are on the rise. It is clear that New York City will remain one of the world’s major centers of artistic and commercial media production well into the future. Between professional demand and the growing integration of digital tools into music-making, we believe that this program will attract a healthy number of applicants from a local, national, and international student base.

The Sonic Arts program will also contribute significantly to the stated mission of Brooklyn College, furthering Brooklyn College’s opportunities for new media education. The program will educate students at the intersection of arts and science, providing both cultural and technical knowledge; its emphasis on the production of creative work will encourage independent thinking and innovation; it will generally raise the intellectual environment of the College by adding a new contingent of high-achieving graduate students; it will raise the national profile of Brooklyn College through the professional activities of the students and graduates of the program; and it will provide access to a graduate education to a diverse group of talented students who are currently underserved.
Students who complete the Master of Fine Arts in Sonic Arts can expect opportunities in a number of job titles. For example:

1. Freelance composer or sound artist
2. Electronic Music Instrument Designer
3. Programming assistant to digital artist/musician
4. Music Programmer (sequencing)
5. Studio musician
6. Electroacoustic music performer
7. Composer for video games, advertising, and multimedia
8. Music arranger for TV/radio/film/new media
9. Sound designer for theater and dance
10. Scoring for theater and dance
11. Sound designer for cinema, TV
12. Music technology instructor
13. Multimedia arts instructor
14. Museum digital arts specialist
15. Audio software programmer
16. Music/audio editor for radio, TV, cinema, internet
17. Sound analyst for law enforcement, security, government
18. Music producer
19. Audio engineer
20. MIDI pre-producer
21. Digital audio/music librarian or archivist
22. Consultant to Technical Manufacturers
23. Consultant to Educational Institutions
24. Product Representative
25. Multimedia Developer (Interactive Multimedia Specialist)
26. Cognitive/computational musicologist
27. Computer Music Researcher
28. Sonic logo developer
III. Students

Several programs of similar nature to our proposed degree exist, including the University of Virginia, University of Washington in Seattle, and the University of Michigan programs in music composition with computer music emphases, as well as the Cal Arts “Experimental Sound Practice” M.F.A. Columbia University has also just launched an M.F.A. in “Sound Arts” through a collaboration between their Computer Music Center and Department of Art, whose first class of students was admitted in the fall of 2013. If the new Columbia program is as popular as their traditional music composition degree, they will have about 125 applicants per year competing for between two and four openings. We feel that our program, combining a New York City location with much lower tuition, will be uniquely attractive to prospective students.

*Tuition Comparison*

- Columbia University offers a 60 credit M.F.A. in Sounds Arts, annual tuition is $55,356 plus fees.
- California Institute of the Arts offers a 60 credit M.F.A. in Experimental Sounds Practice, annual tuition is $43,400 plus fees.
- University of Michigan offers a 36 credit M.A. in Performing Arts Technology, annual tuition is $20,966 plus fees (In State) and $42,016 plus fees (Out-of-State).
- University of Virginia offers a 36 credit M.A. program in Composition and Computer Technologies, annual tuition is $15,244 plus fees (In State) and $25,174 plus fees (Out-of-State).
- University of Washington, Seattle offers a 45 credit M.M. and a Ph.D. in Digital Arts and Experimental Media, annual tuition is $16,278 plus fees (In State) and $28,326 plus fees (Out-of-State).

We project that our students will come from a variety of locations. Nationally, students would be recruited from universities with strong music technology programs at the bachelor's level, such as Oberlin College, Ball State University, University of Virginia, Arizona State University, University of Washington in Seattle, North Texas State University, and others. Local schools would include NYU (Music and Music Technology programs), Hunter College (Music program), City College (Music and Audio Technology program), Queen’s College (School of Music), SUNY Stony Brook (Music program), as well as top students from The New York City College of Technology (Emerging Media Technologies program). Internationally, we will use our growing affiliations in China and Europe to bring this program to the broadest possible audience.

Currently CUNY has only one degree program that is similar to this proposal, the City College Department of Music’s Bachelor of Fine Arts degree in Music with a concentration in Music and Audio Technology, a four-year program that prepares undergraduate students for professional careers as musicians and sound designers. (http://sonic.arts.ccny.cuny.edu/degree.html) We note that although the music technology studios at CCNY are called the ‘CUNY Sonic Arts Center,’ their use of this term applies to commercial audio production training, whereas our proposed M.F.A. degree uses the term to
define an approach to creating with sound that blurs and expands notions of the boundaries among music, sound art, and multimedia.

The proposed program distinguishes itself from the City College BFA in three essential ways:

i. The proposed degree is a graduate degree;

ii. It is a degree for sound creators in which competency of use of technology is assumed, honing their artistic and technical skills to a high professional level;

iii. It allows for an expanded focus into historical and theoretical perspectives that will widen students’ creative visions and provide them with a solid foundation to sustain careers amid continuing revolutions of actual technology used.

Admission to the program will be based on possession of a bachelor’s degree and the presentation of a creative portfolio with secondary emphasis on academic record. Portfolios will contain sound recordings, scores, documentation of works and performances, creator’s notes on each work, and an artistic statement describing his/her artistic goals and the technologies of his/her practice. Applicants will be interviewed, either during a campus visit (recommended) or via telephone or video conference (Skype or similar).

So that matriculated students may learn and grow in a challenging, professionally demanding environment, beginning-level students will not be admitted into the program. Incoming students will be tested for their level of skill and understanding of digital media skills and essential music skills. At the end of the first year of study, all students will be formally reviewed by faculty to approve their continuation in the program.

Ten students will be admitted each year. Our intention is that all students will enroll with a full-time slate of courses. Fully enrolled, the M.F.A. program will house approximately twenty students.

[Five-year Enrollment Projections]

<table>
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<th>Year</th>
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<th>2nd Year</th>
<th>Total</th>
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<td>0</td>
<td>10</td>
</tr>
<tr>
<td>2017-18</td>
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<td>2018-19</td>
<td>10</td>
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<td>20</td>
</tr>
<tr>
<td>2019-20</td>
<td>10</td>
<td>10</td>
<td>20</td>
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</tbody>
</table>
IV. Curriculum

The curriculum will cover four areas: (1) theoretical knowledge, (2) historical perspectives, (3) creative/analytical skills, and (4) technical skills. The intent is to prepare students for the dynamic contemporary cultural and technological work environment, to enable them to handle all aspects of artistic and commercial work whatever form it may take both now and in the future, through a combination of solid theoretical and historical grounding with advanced technology skills and practical experience. Given the rapid pace of technological change, we place strong emphasis on the theoretical, historical, and analytical components to better enable graduates of our program to adapt and succeed through the remainder of their careers.

The curriculum will be offered in a two-year rotation, with some courses annually and others biennially (see example teaching rotation in Appendix B.) Students will also have the opportunity to suggest other lectures and seminars with the approval of the program director. It is worth noting that numerous courses in this curriculum will be integrated as requirements or electives for a number of existing programs as well as the M.F.A. in Media Scoring. The courses that will contribute to the Media Scoring M.F.A. will be marked with an asterisk below. Others will be labeled as part of the Scoring program but available as electives in Sonic Arts. The Sonic Arts courses will also be of interest to students of the Performance and Interactive Media Arts (PIMA) program, Art and Music Composition majors who have an interest in technology, as well as students completing the undergraduate minor in Music Technology.

Sonic Arts Proposed Curriculum Menu:
Students will choose the specified number of credits from classes in each area below. Please see chart for proposed course of study.

The courses listed in this menu are a combination of existing courses, twenty new courses that would be created for this program, and others that will be created as part of the Media Scoring curriculum. The classes will be taught in rotation by existing faculty and a small number of adjunct instructors.

Students will also complete a capstone project as part of the program. The form of this project will be determined by the student in consultation with a faculty advisor and will be subject to faculty approval. Capstone projects will generally be new creative works that implement ideas and techniques developed in the program; however, other projects, such as research papers or new tools for electroacoustic music making (software or hardware) will also be allowed.

1. Prerequisites
   a. Musicianship for Sound Artists (new; 3 hrs; 3 cr.)
b. Introduction to Music Technology (3 hrs; 3 cr.)

2. Theoretical Knowledge (Choose 12 credits)
   a. Computer Music 1 (MUSC 7371; 3 hrs; 3 cr.)
   b. Computer Music 2 (MUSC 7372; 3 hrs; 3 cr.)
   c. Building Electronic Music Instruments (MUSC 7373; 3 hrs; 3 cr.)
   d. Acoustics and Psychoacoustics of Music (new; 2 hrs; 2 cr.)
   e. Computer-Assisted Composition (new; 3 hrs; 3 cr.)
   f. Interactive Computer Music (new; 3 hrs; 3 cr.)
   g. Advanced Interactive Computer Music (new; 3 hrs; 3 cr.)
   h. Seminar in Sonic Arts (new; 3 hrs; 3 cr.)

3. Historical Perspectives (Choose 6 credits)
   a. History of Electronic & Computer Music (new; 3 hrs; 3 cr.)
   b. History of Sound Art (new; 3 hrs; 3 cr.)
   c. History of Popular Music and Technology (new; 3 hrs; 3 cr.)

4. Analysis (Choose 3 credits)
   a. Analysis of Electroacoustic Music (new; 3 hrs; 3 cr.)
   b. History and Analysis of Cinema Scores (Media Scoring program; 3 credits) *

5. Sonic Arts Composition Study (12 credits). One-on-one study with a member of the faculty on topics of electroacoustic composition or sonic art creation.
   a. Sonic Arts Composition I (new; 3 hrs; 3 cr.)
   b. Sonic Arts Composition II (new; 3 hrs; 3 cr.)
   c. Sonic Arts Composition III (new; 3 hrs; 3 cr.)
   d. Sonic Arts Composition IV (new; 3 hrs; 3 cr.)

6. Technical/Professional Skills (Choose 12 credits)
   a. Techniques for Recording Music/Audio Engineering
   b. (3 hrs; 3 cr.)
   c. Advanced Audio Recording (new; 3 hrs; 3 cr.)
   d. Sound Design 1 (Media Scoring program; 3 hrs; 3 cr.) *
   e. Sound Design 2 (Media Scoring program; 3 hrs; 3 cr.) *
   f. Special Topics in Sonic Arts (new; 3 hrs; 3 cr.)
   g. Sequencing/Sampling (Media Scoring program; 3 hrs; 3 cr.) *
   h. Scoring for Motion Pictures and New Media (Media Scoring program; 3 hrs; 3 cr.) *
   i. Music Business for Composers (Media Scoring program program; 3 hrs; 3 cr.) *

7. Sonic Arts Capstone Seminar (new; 3 hrs; 3 cr.).

8. Electives (Choose 12 credits):
   Students are recommended to take courses in Music, PIMA, Art, etc. Electives must be approved by the Sonic Arts program director. Courses other than those listed below may be taken upon approval by the program director.
   a. Music
      i. Electroacoustic Music Ensemble (MUSC 7744; 3 hrs; 1 cr.)
      ii. Seminar in Music History: Twentieth Century (MUSC 7606G; 3 hrs; 3 cr.)
      iii. Seminar in Music Theory: Analysis of Twentieth-Century Music (MUSC 7642X; 3 hrs; 3 cr.)
   b. PIMA
      i. Dynamic and Interactive Media Performance 1 (PIMA 7741; 4 hrs; 3 cr.)
      ii. Dynamic and Interactive Media in Performance 2 (PIMA 7742; 4 hrs; 3 cr.)
   c. Art
i. The Aesthetics of Information (ARTD 7810; 3 hrs; 3 cr.)
ii. Advanced Digital Art I (ARTD 7820G; 3 hrs; 3 cr.)
iii. Advanced Digital Art II (ARTD 7821G; 3 hrs; 3 cr.)

**TOTAL of 60 credits**
[* Indicates courses that will be integrated into M.F.A. in Media Scoring]

**Possible course of study for a Sonic Arts student**

<table>
<thead>
<tr>
<th>Year One, Fall</th>
<th>Year One, Spring</th>
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<tbody>
<tr>
<td>Computer Music 1 (3 cr.)</td>
<td>Computer Music 2 (3 cr.)</td>
</tr>
<tr>
<td>Techniques of Recording Music (3 cr.)</td>
<td>Sound Design I (3 cr.)</td>
</tr>
<tr>
<td>History of Sound Art (3 cr.)</td>
<td>History of Electronic and Computer Music (3 cr.)</td>
</tr>
<tr>
<td>Sonic Arts Composition Study I (3 cr.)</td>
<td>Sonic Arts Composition study II (3 cr.)</td>
</tr>
<tr>
<td>Electives (3 cr.)</td>
<td>Electives (3 cr.)</td>
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<tr>
<td><strong>TOTAL: 15 credits</strong></td>
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<tr>
<th>Year Two, Fall</th>
<th>Year Two, Spring</th>
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<tbody>
<tr>
<td>Building Electronic Music Instruments (3 cr.)</td>
<td>Analysis of Electroacoustic Music (3 cr.)</td>
</tr>
<tr>
<td>Sonic Arts Composition study III (3 cr.)</td>
<td>Sonic Arts Composition Study IV (3 cr.)</td>
</tr>
<tr>
<td>Sonic Arts Capstone seminar (3 cr.)</td>
<td>Advanced Audio Recording (3 cr.)</td>
</tr>
<tr>
<td>Sequencing/Sampling (3 cr.)</td>
<td>Computer-Assisted Composition (3 cr.)</td>
</tr>
<tr>
<td>Electives (3 cr.)</td>
<td>Electives (3 cr.)</td>
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<tr>
<td><strong>TOTAL: 15 credits</strong></td>
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**V. Faculty**

We recommend the addition of a shared full-time faculty line associated with this program, and the Media Scoring M.F.A. program. One full-time CLT will be required to administrate and coordinate the technology for this program and the MFA in Media Scoring. The core faculty will come from the Conservatory of Music at Brooklyn College.

**George Brunner** *(Music Composition, Electroacoustic Music, Sound Design)*

B.F.A., California Institute of the Arts; M.F.A., California Institute of the Arts

Electro-Acoustic Music Festival of Brooklyn College, which has been in existence since 1987. His music has been released on *Chrysopée Electronique 25* (2003), MSR Classics (2009), and MSR Classics (Autumn 2010).

**Douglas Cohen** *(Music Composition, Intermedia, New Media Scoring)*  
B.F.A., California Institute of the Arts; M.F.A., California Institute of the Arts; Ph.D., State University of New York – Buffalo  
Douglas Cohen is an intermedia composer and often collaborator with film, performance and folk artists, as well as an early advocate for digital media on the Internet. He organized the NewMusNet Conference of Arts Wire with Pauline Oliveros and later was Arts Wire Systems Coordinator. Cohen is a specialist in American experimental music with particular attention to the work of John Cage, Morton Feldman, and Pauline Oliveros. He co-created and produced the evening length intermedia work *imus circus* at Experimental Intermedia in New York and LACE Gallery in Los Angeles (later with the California EAR Unit at the L.A. County Museum of Art) as City Circus events for the John Cage exhibition *Rolywholyover a Circus.*

**Jason Eckardt** *(Music Composition)*  
Jason Eckardt’s music has been influenced by his interests in perceptual complexity, performance virtuosity, and self-organizing processes in the natural world. He has been recognized through commissions and awards from Carnegie Hall, Tanglewood, the Guggenheim, Rockefeller, Koussevitzky, and Fromm Foundations, the Guggenheim Museum, the ISCM, Deutschen Musikrat, and percussionist Evelyn Glennie. Eckardt’s music has been performed at major festivals and recorded on the CRI, Helicon, Metier, Capstone, and Mode labels. An active promoter of new music, Eckardt is a co-founder and the Executive Director of Ensemble 21, the contemporary music group. Eckardt’s areas of expertise include composition, post-tonal analysis, extended instrumental and vocal techniques, and musical cognition and perception.

**Douglas Geers** *(Music Composition, Electroacoustic Music, Multimedia)*  
B.A., Xavier University; M.M., University of Cincinnati College-Conservatory of Music; D.M.A., Columbia University.  
Douglas Geers’ work focuses on creative integration of new technologies and multimedia dimensions into concert music, with a continuing emphasis on interactive electroacoustic works. Mr. Geers has had hundreds of known performances of his music worldwide, including numerous international festivals and on programs by acclaimed performers such as Ensemble Fa, Speculum Musicae, The Radio-Television Orchestra of Slovenia, Ensemble Pi, the NODUS Ensemble, the Princeton University Laptop Orchestra (PLOrk), the Verge Ensemble, and Zeitgeist. He has won grants and awards from sources including the MacArthur Foundation, Bush Foundation, Argossy Foundation, McKnight Foundation, Jerome Foundation, Roth-Thompson Foundation, Fulbright Foundation, and others. In 2003 Geers founded the Spark Festival of Electronic Music and Arts, which he directed annually through 2009. He is currently Director of the Center for Computer Music at Brooklyn College, City University of New York.

**David Grubbs** *(Music and Technology)*  
B. A., Georgetown University; M. A., University of Chicago; Ph. D., University of Chicago  
David Grubbs has released eleven solo albums and appeared on more than 150 commercially-released recordings. He is known for his cross-disciplinary collaborations with writers such as Susan Howe and Rick Moody, and with visual artists such as Anthony McCall, Angela Bulloch,
Cosima von Bonin, and Stephen Prina. His work has been presented at the Solomon R. Guggenheim Museum, MoMA, the Tate Modern, and the Centre Pompidou. Grubbs has played in the groups Gastr del Sol, the Red Krayola, the Wingdale Community Singers, Bastro, and Squirrel Bait, and currently directs the Blue Chopsticks record label. His book Records Ruin the Landscape: John Cage, The Sixties, and Sound Recording is forthcoming from Duke University Press. Grubbs was a 2005-6 grant recipient from the Foundation for Contemporary Arts, and his 2000 album The Spectrum Between was named “Album of the Year” in the London Sunday Times.

Rudolph “Sonny” Kompanek (adjunct, Music Composition)
Sonny Kompanek has orchestrated more than seventy feature films and his compositions have been performed by the major orchestras of New York, Boston, and Atlanta. He has written for a wide variety of artists ranging from Wynton Marsalis to Soul Asylum, Boyz II Men, and the Canadian Brass. After moving to New York in 1977, he began arranging and orchestrating for film composer Michael Small and later for Carter Burwell. He has worked extensively with many top composers, including Howard Shore, Michael Kamen, John Powell, Elliott Goldenthal, Wyclef Jean, and Cy Coleman. Prof. Kompanek is the author of the highly acclaimed book on film scoring, From Score to Screen, published by Schirmer Books. He holds a Master of Music degree from the Eastman School, where he was awarded a full scholarship, as a student of Thomas Canning and Samuel Adler. He studied piano with the Brooks Smith, the legendary accompanist of Jascha Heifetz. He has taught film scoring at NYU since 2000.

Tania León (Music Composition)
B. S., New York University; M. A., Carlos Alfredo Peyrellade Conservatory, Havana, Cuba; M. A., New York University. Tania León (b. Havana, Cuba) is highly regarded as a composer and conductor and recognized for her significant accomplishments as an educator and advisor to arts organizations. She was awarded the 1998 New York Governor's Lifetime Achievement Award and held the Fromm Residency at the American Academy in Rome. She has received Honorary Doctorates from Colgate University, Oberlin College, and SUNY Purchase and awards from the American Academy of Arts and Letters, National Endowment for the Arts, Chamber Music America, NYSCA, Lila Wallace/Reader's Digest Fund, ASCAP, Guggenheim, and the Koussevitzky Foundation, among others. León was a founding member of the Dance Theatre of Harlem. She instituted the Brooklyn Philharmonic Community Concert Series in 1978 and, in 1994, co-founded the American Composers Orchestra "Sonidos de las Americas Festivals" where she is Music Advisor. Additionally, she served as New Music Advisor to Kurt Masur and the New York Philharmonic from 1993 to 1997. León has been Visiting Lecturer at Harvard University, and Visiting Professor at Yale, Michigan, and the Musikschule in Hamburg. She has appeared as guest conductor with the Symphony Orchestra of Marseilles (France), L'orchestre de la Suisse Romande, Santa Celia Orchestra (Italy), Gewaundhausorchester (Germany), Orquesta Sinfonica de Asturias (Spain), and the New York Philharmonic, among others. Her music is available on Nonesuch, Teldec, Naxos, CRI, Albany, Quindecim, Newport Classic, Leonarda, Mode, Innova, and First Edition Records. She has been the subject of profiles on ABC, CBS, CNN, PBS, Univision, and Telemundo as well as several independent films. In 2000 she was named the Tow Distinguished Professor at Brooklyn College, where she has taught since 1985, and was named Distinguished Professor of the City University of New York in 2006. In 2009 she founded the Composers Now Festival in New York City, of which she is also artistic director; and in 2010 she was inducted as a member of the American Academy of Arts and Letters.
Miguel Macias (TV/Radio)
M.F.A. in Television production, Brooklyn College
Miguel Macias is a radio producer, sound designer, musician and video producer based in Brooklyn, New York. Currently Miguel is an Assistant Professor at the department of Television and Radio at Brooklyn College, Director of the Radio Studies Program and faculty supervisor for WBCR (Brooklyn College Radio). Originally from Sevilla, Spain, Miguel completed an M.F.A. in Television production at Brooklyn College and then joined the ranks of New York Public Radio, WNYC, as an Associate Producer. While working at WNYC, he received a Peabody Award in 2006 for the Radio Rookies series. After WNYC, Miguel moved to Los Angeles where he joined the production team of American Public Media’s Marketplace. For two years he was the overnight Associate Producer and Director of the Marketplace Morning Report. At Marketplace, Miguel also had the opportunity to travel to the Middle East as the Associate Producer and documentarian for the project The Middle East at Work. Miguel's credits include NPR's All Things Considered, NPR's Morning Edition, PRI's The World, PRI's This American Life, ABC Radio National, Youth Radio, and NGO Madre.
### Proposed Teaching Rotation (A two-year cycle)

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<thead>
<tr>
<th>Year One, Fall:</th>
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<tbody>
<tr>
<td><strong>Course</strong></td>
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<tr>
<td>Musicianship for Sound Artists</td>
<td>Cohen</td>
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<tr>
<td>Computer Music 1</td>
<td>Geers</td>
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<tr>
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<td>Geers</td>
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<td>Grubbs</td>
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<td>Techniques for Recording Music</td>
<td>Brunner</td>
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<td>Composition (5 students)</td>
<td>Cohen</td>
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<tr>
<td>Composition (5 students)</td>
<td>Geers</td>
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<tr>
<td>Composition (5 students)</td>
<td>Grubbs</td>
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<tr>
<td>Composition (9 students)</td>
<td>TBA</td>
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<tr>
<td>Electroacoustic Ensemble</td>
<td>TBA</td>
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<tr>
<td>Capstone Seminar</td>
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<tr>
<td>(36 hours of teaching)</td>
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<td>Computer Music 1</td>
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<tr>
<td>Interactive Computer Music</td>
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<td>Seminar in Sonic Arts</td>
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<td>Techniques for Recording Music</td>
<td>Brunner</td>
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<td>History of Popular Music and Technology</td>
<td>Grubbs</td>
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<tr>
<td>Composition (5 students)</td>
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<td>Capstone Seminar</td>
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<td>(39 hours of teaching)</td>
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VI. Cost Assessment

The M.F.A. program in Sonic Arts will generate income through tuition funds and course lab fees. In addition, outside funding streams will be explored. Given its close ties with the existing programs in music composition and PIMA, as well as the in-development M.F.A. in Media Scoring, it will not require exceptional resources. However, it will require a budget and a level of support consonant with the high standard of artistic and professional training that it seeks to provide.

VII. Program Evaluation Sonic Arts

Professors Judith Shatin and Brad Garton gave strong reviews of the Sonic Arts Program. Both felt that it is an important and growing field, an excellent area for Brooklyn College to expand—given its solid reputation for music technology. They felt the motivation for the program was clear, the program sustainable and that the faculty had the expertise and reputation to attract students.

Garton suggests that as much flexibility as possible be retained in the curriculum. We have addressed this matter by allowing the students to take a variety of electives, which will change over time to keep the curriculum flexible and current. The classes will be taught in rotation by existing faculty and a small number of adjunct instructors. As you can see in the excerpt from the proposal, the program was conceived to take into account the rapid changes in technology.

From the Proposal:

Curriculum

The curriculum will cover four areas: (1) theoretical knowledge, (2) historical perspectives, (3) creative/analytical skills, and (4) technical skills. The intent is to prepare students for the dynamic contemporary cultural and technological work environment, to enable them to handle all aspects of artistic and commercial work whatever form it may take both now and in the future, through a combination of solid theoretical and historical grounding with advanced technology skills and practical experience. Given the rapid pace of technological change, we place strong emphasis on the theoretical, historical, and analytical components to better enable graduates of our program to adapt and succeed through the remainder of their careers.

The curriculum will be offered in a two-year rotation, with some courses annually and others biennially (see example teaching rotation in Appendix B.) Students will also have the opportunity to suggest other lectures and seminars with the approval of the program director.

The courses listed in this menu are a combination of existing courses, nineteen new courses that would be created for this program, and others that will be created as part of the Media Scoring curriculum.

Professor Garton raised the issue of studio space and the need for students to have access to tools, hardware and software. The students will take classes at the Brooklyn College’s Barry R. Feirstein Graduate School of Cinema will be located at Steiner Studios at 25 Washington Avenue, in Brooklyn, New York. The School will occupy 68,000 square feet, on two floors (all of the sixth
floor and two-thirds of the fifth floor) and will include the following: Eighteen faculty offices, at least one of which will be used as hoteling space for representatives from Brooklyn College’s offices of the Registrar, Bursar, Financial and others, who may be on-site at 25 Washington on a regularly scheduled basis; four conference rooms for faculty and staff; offices for the Director, Higher Education Associate (Program Manager) and Higher Education Assistant (Technology); a Department office; seven editing suites; four finishing suites; a motion capture studio; a foley stage; a scoring stage; an ADR room; a post-production lab, plus one staff office for the post-production lab manager; a computer lab; an animation and visual effects lab, with an adjacent room that will house the animation “render farm”; a design lab; a construction shop; one 4,000 sq. ft. sound stage and three 1,200-1,500 square foot sound stage production studios which will serve as classrooms for various courses offered in the MFA program; four student production offices, one conference room and a pantry for students; four dressing rooms, a shower and one green room for talent; a wardrobe workroom and a storage room for wardrobe; a 72-seat screening room; an equipment room, with a staff office and repair room and three bays for equipment checkout; two seminar rooms and two lecture halls.

In addition, the new Performing Arts Center will open on the Brooklyn College campus in spring 2016. This building will house a number of rehearsal spaces, recording studios, computer suites and a 220 seat theater.

The students enrolled in the Sonic Arts program will have access to the finest studio and rehearsal spaces, latest technology, recording and foley studios that Brooklyn College offers. The affiliation with the film school and the performing arts center will also keep the program from dissolving into a “recording studio tech” program as Graton cautions.

Professor Garton also suggested that as the program develops, it might encompass other areas such as sculpture, video, film and visual arts. Brooklyn College, in fact, has an outstanding graduate program in Performance and Interactive Media Arts which addresses the areas outlined by Garton. In time, there will be a growing synergy between the programs since many of the faculty mentioned in the proposal also serve as critics in the PIMA program.

Both reviewers mentioned the need for an additional faculty member. Professor Shatin rightly points out that the program can certainly open with the current faculty and the new faculty member can be hired soon after. It is the intent of the college to support this program—faculty, labs, studios and equipment are all in place. As it grows, resources will also grow with it.
APPENDIX A: COURSE DESCRIPTIONS AND SYLLABI FOR NEW COURSES
NEW COURSES

Conservatory of Music

MUSC.7014X: Musicianship for Sound Artists

45 hours; 3 credits

Bulletin Description:
Introduction to fundamental nomenclature and aural skills of Western music. Music theory and the development of abilities to discern musical intervals, scales, and rhythms.

Prerequisite: Permission of director.

Frequency of Offering: Once every year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
The field of Sonic Arts has opened creative possibilities in sound to musicians and artists beyond those trained in the manner of a traditional university Music curriculum. Although this expansion of student opportunities is a positive development, it would benefit this cohort of students significantly to receive some instruction regarding the ideas, terminology, and sonic organization that are considered fundamental for trained musicians. Having this course will enable the ‘non-trained’ Sonic Arts students to listen analytically and discuss sound and music works in a professional fashion with colleagues, faculty, and employers.

Date of departmental approval: March 11, 2014

Effective date: Fall 2015

LEARNING OBJECTIVES:
- Provide students with introduction and training in fundamentals of music theory.
- Provide students with introduction and training in fundamental aural skills.
- Give students opportunities to practice skills and terminology in the classroom as preparation for future professional situations.
OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly assignments and readings discussions and in-class practice to determine comprehension.
- Weekly quizzes to test progress.
- Mid-term examination to assess student comprehension and skills acquisition.
- Final examination.

Course Outline for Musicianship for Sound Artists:
DATE: Topics:
Week 1 Introduction. Discussion of plan for semester. First assignment.
Week 2 Introduction to musical intervals: nomenclature and aural discrimination. Discussion of concept of tonic.
Week 3 Introduction to scales and modes. Continued practice with interval recognition.
Week 5 Introduction to pulse, rhythm, and meter. Simple meters. Continued practice with intervals and scales.
Week 6 Compound meters, polyrhythms and polymeters. Tempo. Continued practice with intervals, scales, and meters.
Week 7 Midterm examination.
Week 8 Dynamics and articulation. Continued practice with intervals, scales, and meters.
Week 10 Overview of jazz harmony and nomenclature. Continued practice with intervals, scales, and meters.

Week 11 Introduction to terminology and listening skills fundamental to studio music production. Continued practice with intervals, scales, and meters.

Week 12 Overview of electroacoustic music styles, techniques, and nomenclature. Identifying sound objects and sound transformations. Continued practice with intervals, scales, and meters.

Week 13 Introduction to scholarly approaches to music analysis and related nomenclature. Continued practice with intervals, scales, and meters.

Week 14 Review for final examination.

Week 15 Final examination.

Bibliography
NEW COURSES

Conservatory of Music

MUSC.7015X: Techniques for Recording Music/Audio Engineering

45 hours: 3 credits

Bulletin Description:

Prerequisite: MUSC 7370 or permission of director.

Frequency of Offering: once every year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion and Rationale:
Recorded music and audio permeates contemporary society. This course will introduce students to fundamental ideas and practical knowledge required for them to make audio recordings of music and mix the results into a professional, finished work.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:

- Develop a broad, integrated understanding of music technology employed in popular music through coverage of key cultural texts.

- Develop critical skills to connect diverse cultural texts within social/historical contexts.

- Develop skills to carry out primary and secondary text-based library research.

- Develop skills to communicate through well-organized expository prose writing.
OUTCOMES ASSESSMENT:

Students will demonstrate their ability to meet the stated learning objectives by:
- Classroom discussion
- Mid-term exam
- Final exam
- Final project

Course Outline for Techniques for Recording Music/Audio Engineering:

**Week 1** Basics of Sound; What is sound, sound pressure waves, sound pressure levels (SPL); transducers; waveform characteristics: Amplitude, Frequency, Velocity, Wavelength, Phase, Harmonic Content, Envelope; the recording studio and recording industry people/careers. Assignment: music examples showing basic perceptions.

**Week 2** Sound and Hearing continued; the dB; threshold of feeling, threshold of feeling, threshold of pain; loudness vs. intensity, Fletcher-Munson; reflection, diffraction and reverberation of sound; frequency response; perception of direction; beats, combination tones, masking. Assignments: acoustic phase experiment, phase cancellation experiment, beats experiment, combination tones experiment, masking experiment. Play music examples from previous week.

**Week 3** Microphones; design and operating principles; dynamic, ribbon, condenser microphones; phantom power; rules of audio; directional response, frequency response, transient response; polar patterns; balanced/unbalanced lines; PZM; microphone preamps.

**Week 4** Microphones continued. Distant, close, accent and ambient techniques; 3:1 and 5:1 rules. Directional response, Transient response, Frequency response characteristics. Stereo microphone techniques: X-Y (NAB and ORTF), M-S, Spaced pairs and combination techniques. Recording assignment: record spoken text...any technique discussed.

Reading: The Acoustical Foundations of Music 4/5 – Backus.

**Week 5** Review individual recordings and techniques used. Complete review of microphones and all techniques. Studio and concert hall tour. Video:
Enhancing Your Sound: Microphones section.
Reading: Musical Acoustics Ch 9 – Hall.

**Individual Final Recording Project Proposal**

**Week 6**  
Classical recording vs. Studio recording. Mixers: an introduction. Microphone placement guidelines for acoustic instruments and electric and amplified instruments. Recording assignment: 2 minute recording of an instrument...not piano or percussion.

**Week 7**  
Mixers continued. The channel strip, aux sends, basics of equalization, panning, busses, the output section. Recording assignment: 2 minute recording of 2 or more instruments or voices.

**Mid-term Exam**

**Week 8**  

**Week 9**  

**Week 10**  
Digital editing continued. Importing, editing, saving and exporting files. Integrated systems.

**Week 11**  
Digital Audio Workstations. Recording, editing and mixing 8-16 tracks, overdubbing, synchronization and playback.
Reading: Principles of Digital Audio Ch 14, Pohlmann.

**Week 12**  
DSP: in-line vs. side chain, routing; equalization: peaking, shelving, high and low pass filters; dynamics processing; time based effects: delay, reverberation, pitch shifting and psychoacoustic acoustic enhancement; sends and returns.

**Week 13**  
Amplifiers and loudspeakers; Session mixdown; Pre-mastering.

**Week 14**  
Final projects presentation and review.

**Week 15**  
Final examination

**Bibliography:**
NEW COURSES

Conservatory of Music

MUSC.7016X: Advanced Audio Recording Techniques and Engineering

45 hours: 3 credits

Bulletin Description:
Advanced theories and techniques of sound recording, mixing, and mastering. Live versus studio recording. Microphone techniques, equalization, and application of other signal processing algorithms. Adjusting sound across multiple recordings to match them as a single sonic work.

Prerequisite: MUSC 7015.

Frequency of Offering: once every year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion and Rationale:
Recorded sound is by far the most common situation in which contemporary listeners hear music. It is valuable for students to gain advanced understanding of how to make audio recordings and how to mix recorded materials into a finished work.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:

- Develop a broad, integrated understanding of music technology employed in popular music through coverage of key cultural texts.

- Develop critical skills to connect diverse cultural texts within social/historical contexts.

- Develop skills to carry out primary and secondary text-based library research.
- Develop skills to communicate through well-organized expository prose writing.

OUTCOMES ASSESSMENT:

Students will demonstrate their ability to meet the stated learning objectives by:
- Classroom discussion
- Mid-term exam
- Final exam
- Final project

Course Outline for Advanced Audio Recording and Engineering:

**Week 1**  
Review sound and hearing: properties of sound, waveform, waveform characteristics, the ear and perception, how sound travels, how we understand sound, SPL, dB. Understanding elements of sound: frequency, amplitude, wavelength, velocity, phase, harmonic content and envelope.  
Reading: Modern Recording Techniques Ch 1 and 2 – Runstein and Huber; Musical Acoustics Ch 1 & 2 – Hall.

**Week 2**  
Design and operating principles of microphones.  
Reading: Modern Recording Techniques CH 4 – Runstein and Huber.

**Week 3**  
Testing and plotting polar patterns of different types of dynamic and condenser microphones and comparing the results.

**Week 4**  
Principles and theory of stereo microphone techniques. First recording session: piano.  
Reading: The Acoustical Foundations of Music 4/5 – Backus.

**Week 5**  
Review piano recording sessions. Combination microphone techniques: NAB/ORTF, Flanking Omnis; Stereo Pair plus sectional or individual microphones.  
Reading: Musical Acoustics Ch 9 – Hall.  
**Individual Final Recording Project Proposal**

**Week 6**  
Understanding mixers: live mixing vs. studio mixing. Second recording session: percussion using multiple microphones and microphone techniques.
Reading: Musical Acoustics Ch 8 – Hall.

**Week 7** Review percussion recording sessions. Studio recording. The signal path in the recording studio: from microphone(s) to hard drive. **Mid-term Exam.**

**Week 8** Mixers continued. The channel strip, output section. Reading: Modern Recording Techniques CH 9 – Runstein and Huber.


**Week 10** Digital editing continued. Importing a session, editing the session, saving the session. Looping, inverting, normalizing, reversing, sampling, exporting. Integrated systems.


**Week 12** Digital signal processing (DSP). Equalization, reverberation, time delay processes, dynamics processing, compressors, limiters, expanders and noise reduction.

**Week 13** Session mixdown and pre-mastering (CD, internet download, streaming).

**Week 14** Final projects review.

**Week 15** Final examination.

**Bibliography:**
NEW COURSES

Conservatory of Music

MUSC.7331X: Sonic Arts Composition I

45 hours; 3 credits

Bulletin Description:
One-on-one tutorial in which majors develop new compositions under the guidance of a member of the Sonic Arts faculty. Assignment of readings, listenings, and analysis of works as models, as deemed appropriate by the faculty. Students produce finished works for performance or exhibition.

Prerequisite: Permission of director.

Frequency of Offering: Once per year.

Projected enrollment: 10

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
It is imperative for developing artists to receive instruction and critique from faculty in their area, in order to develop technique and awareness of their work’s place within both contemporary and historical contexts. Just as with all music majors at the Conservatory of Music of Brooklyn College (and nearly all music schools worldwide), the individual lesson with an accomplished faculty member is a fundamental part of every student’s degree program. This course will enable students to hone their artistry and craft to a professional level.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Develop student’s technical skills as a sonic artist.
- Develop student’s creative style and understanding of its relationship to existing work.
- Give student the opportunity to compose new work with close guidance.
- Engage in critical dialogue regarding methodologies, aesthetics, and presentation of finished works.

**OUTCOMES ASSESSMENT:**
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of one or more finely-crafted new works of sonic art.
- Completion of assigned readings, listening, and analysis assignments.
- Participation in discussion with instructor of topics to express students’ perceptions of course materials, using appropriate vocabulary and concepts.

**Course Outline for Sonic Arts Composition I**

<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics</th>
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</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td>Introduction. Review of existing work. Formulation of plan for semester.</td>
</tr>
<tr>
<td><strong>Week 2</strong></td>
<td>Presentation and discussion of planned project(s) for semester.</td>
</tr>
<tr>
<td><strong>Week 3</strong></td>
<td>First sketches due. Critique and discussion.</td>
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<tr>
<td><strong>Week 4</strong></td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<tr>
<td><strong>Week 5</strong></td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<td><strong>Week 6</strong></td>
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<td><strong>Week 7</strong></td>
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<td><strong>Week 8</strong></td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<td><strong>Week 9</strong></td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<td><strong>Week 10</strong></td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<tr>
<td><strong>Week 11</strong></td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<tr>
<td><strong>Week 12</strong></td>
<td>Revisions and new materials presented. Critique and discussion.</td>
</tr>
<tr>
<td><strong>Week 13</strong></td>
<td>Finished project(s) due. Discussion and plan for revisions.</td>
</tr>
</tbody>
</table>
**Week 14**  
Final revisions of project(s) due.

**Week 15**  
Review of semester’s work and assessment of success or failure of project(s).

**Bibliography**

NEW COURSES

Conservatory of Music

MUSC.7332X: Sonic Arts Composition II

45 hours; 3 credits

Bulletin Description:
One-on-one tutorial in which majors develop new compositions under the guidance of a member of the Sonic Arts faculty. Assignment of readings, listenings, and analysis of works as models, as deemed appropriate by the faculty. Students produce finished works for performance or exhibition.

Prerequisite: 7331.

Frequency of Offering: Once per year.

Projected enrollment: 10

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
It is imperative for developing artists to receive instruction and critique from faculty in their area, in order to develop technique and grow awareness of their work’s place within both contemporary and historical contexts. Just as with all music majors at the Conservatory of Music of Brooklyn College (and nearly all music schools worldwide), the individual lesson with an accomplished faculty member is a fundamental part of every student’s degree program. This course will enable students to hone their artistry and craft to a professional level.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Develop student’s technical skills as a sonic artist.
- Develop student’s creative style and understanding of its relationship to existing work.
- Give student the opportunity to compose new work with close guidance.
- Engage in critical dialogue regarding methodologies, aesthetics, and presentation of finished works.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of one or more finely-crafted new works of sonic art.
- Completion of assigned readings, listening, and analysis assignments.
- Participation in discussion with instructor of topics to express their perceptions of course materials, using appropriate vocabulary and concepts.

Course Outline for Sonic Arts Composition II

<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics</th>
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</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction. Review of existing work. Formulation of plan for semester.</td>
</tr>
<tr>
<td>Week 2</td>
<td>Presentation and discussion of planned project(s) for semester.</td>
</tr>
<tr>
<td>Week 3</td>
<td>First sketches due. Critique and discussion.</td>
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<tr>
<td>Week 4</td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<td>Week 5</td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<td>Revisions and new materials presented. Critique and discussion.</td>
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<td>Week 10</td>
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<td>Week 11</td>
<td>Revisions and new materials presented. Critique and discussion.</td>
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<tr>
<td>Week 12</td>
<td>Revisions and new materials presented. Critique and discussion.</td>
</tr>
<tr>
<td>Week 13</td>
<td>Finished project(s) due. Discussion and plan for revisions.</td>
</tr>
</tbody>
</table>
Week 14  Final revisions of project(s) due.

Week 15  Review of semester’s work and assessment of success or failure of project(s).

Bibliography
NEW COURSES

Conservatory of Music

MUSC.7333X: Sonic Arts Composition III

45 hours; 3 credits

Bulletin Description:
One-on-one tutorial in which majors develop new compositions under the guidance of a member of the Sonic Arts faculty. Assignment of readings, listenings, and analysis of works as models, as deemed appropriate by the faculty. Students produce finished works for performance or exhibition.

Prerequisite: MUSC 7332.

Frequency of Offering: Once per year.

Projected enrollment: 10

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
It is imperative for developing artists to receive instruction and critique from faculty in their area, in order to develop technique and grow awareness of their work’s place within both contemporary and historical contexts. Just as with all music majors at the Conservatory of Music of Brooklyn College (and nearly all music schools worldwide), the individual lesson with an accomplished faculty member is a fundamental part of every student’s degree program. This course will enable students to hone their artistry and craft to a professional level.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Develop student’s technical skills as a sonic artist.
- Develop student’s creative style and understanding of its relationship to existing work.
- Give student the opportunity to compose new work with close guidance.
- Engage in critical dialogue regarding methodologies, aesthetics, and presentation of finished works.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of one or more finely-crafted new works of sonic art.
- Completion of assigned readings, listening, and analysis assignments.
- Participation in discussion with instructor of topics to express their perceptions of course materials, using appropriate vocabulary and concepts.

Course Outline for Sonic Arts Composition III
DATE:          Topics:
Week 1         Introduction. Review of existing work. Formulation of plan for semester.
Week 2         Presentation and discussion of planned project(s) for semester.
Week 3         First sketches due. Critique and discussion.
Week 4         Revisions and new materials presented. Critique and discussion.
Week 5         Revisions and new materials presented. Critique and discussion.
Week 6         Revisions and new materials presented. Critique and discussion.
Week 7         Revisions and new materials presented. Critique and discussion.
Week 8         Revisions and new materials presented. Critique and discussion.
Week 9         Revisions and new materials presented. Critique and discussion.
Week 10        Revisions and new materials presented. Critique and discussion.
Week 11        Revisions and new materials presented. Critique and discussion.
Week 12        Revisions and new materials presented. Critique and discussion.
Week 13        Finished project(s) due. Discussion and plan for revisions.
**Week 14**  
Final revisions of project(s) due.

**Week 15**  
Review of semester’s work and assessment of success or failure of project(s).

**Bibliography**

NEW COURSES

Conservatory of Music

MUSC.7334X: Sonic Arts Composition IV

45 hours; 3 credits

Bulletin Description:
One-on-one tutorial in which majors develop new compositions under the guidance of a member of the Sonic Arts faculty. Assignment of readings, listenings, and analysis of works as models, as deemed appropriate by the faculty. Students produce finished works for performance or exhibition.

Prerequisite: MUSC 7333.

Frequency of Offering: Once per year.

Projected enrollment: 10

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
It is imperative for developing artists to receive instruction and critique from faculty in their area, in order to develop technique and grow awareness of their work’s place within both contemporary and historical contexts. Just as with all music majors at the Conservatory of Music of Brooklyn College (and nearly all music schools worldwide), the individual lesson with an accomplished faculty member is a fundamental part of every student’s degree program. This course will enable students to hone their artistry and craft to a professional level.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Develop student’s technical skills as a sonic artist.
- Develop student’s creative style and understanding of its relationship to existing work.
- Give student the opportunity to compose new work with close guidance.
- Engage in critical dialogue regarding methodologies, aesthetics, and presentation of finished works.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of one or more finely-crafted new works of sonic art.
- Completion of assigned readings, listening, and analysis assignments.
- Participation in discussion with instructor of topics to express their perceptions of course materials, using appropriate vocabulary and concepts.

Course Outline for Sonic Arts Composition IV

<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Introduction. Review of existing work. Formulation of plan for semester.</td>
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<tr>
<td>Week 2</td>
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<tr>
<td>Week 13</td>
<td>Finished project(s) due. Discussion and plan for revisions.</td>
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<tr>
<td>Week 14</td>
<td>Final revisions of project(s) due.</td>
</tr>
</tbody>
</table>
Week 15
Review of semester’s work and assessment of success or failure of project(s).

Bibliography
NEW COURSES

Conservatory of Music

MUSC.7374X: Computer-Assisted Music Composition

45 hours; 3 credits

Bulletin Description:
Introduction and exploration of methods employed by composers and sonic artists to devise work using the computational power of computers. Students learn algorithmic techniques and use them to create new pieces.

Prerequisite: Permission of director.

Frequency of Offering: Once every other year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
Contemporary computer technologies have revolutionized how people communicate, learn, research, make purchases, and receive entertainment. Artists and musicians are now creating works using algorithms developed for research and commercial purposes. This course will introduce students to the possibilities offered by use of formalized algorithms as means to generate and develop musical materials for both electronic and entirely acoustic music. Time will also be spent investigating ways that algorithms may be convincingly mapped to musical parameters. We will focus on the music notation-based software systems PWGL and OpenMusic, and will survey others to provide an overview of current approaches. Selected works will be studied to illustrate the wide variety of ways that algorithmic methods have been applied to composition.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Develop an essential understanding of algorithmic approaches to creativity and familiarity with numerous widely-used algorithmic composition techniques.
- Become familiar with examples of algorithmically-designed work by esteemed artists and composers.

- Develop essential skills to implement algorithms for creative purposes using widely-available music composition software.

- Create new work that integrates concepts and techniques taught in the course.

- Engage in critical dialogue regarding techniques and resulting works.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of ten project assignments during the semester to demonstrate students’ understanding of concepts and ability to apply them in a creative context.

- Participation in classroom discussion of topics to express students’ perceptions of course materials, using appropriate vocabulary and concepts.

- An in-class multimedia presentation on a topic agreed upon with the instructor that explores an aspect of course content.

- A large-scale final project that applies concepts and techniques learned in the class within the context of a new creative work.

Course Outline for Computer-Assisted Composition:

**DATE: Topics:**

**Week 1**
Introduction. History and overview of algorithms in music from the ancient Greeks to today. Introduction to PWGL software. Simple pitch set operations (transposition, retrograde, inversion). Examples of these in music of Arnold Schoenberg and Anton Webern.

**Week 2**

**Week 3**
Chance music, aleatoric music, and stochastic music. Examples of these procedures in the music of John Cage, Iannis Xenakis, and Paul Lansky. Using chance and probability to generate collections of pitches in PWGL: random, nth-random, perturbation, and choice (choix). Exporting PWGL materials to a MIDI sequencer.
Week 4 Creating rhythmic patterns in PWGL. Simple methods to alter existing rhythmic patterns (inversion, retrograde, rotate, filter, substitution). Using OMloop to generate materials. Use of rhythmic patterns in the music of Steve Reich and Brian Ferneyhough.

Week 5 Creating melodies from harmonic reservoirs. Interpolating between melodies. Creating chord sequences and melodies with chain procedures. Testing materials for fitness (OMif).

Week 6 Managing note durations and using rests in chord-seq. Using BPFs to shape materials. Examples from Six Metal Fugue by Christopher Melen.

Week 7 Using constraints as a compositional tool in PWGL. Student presentations.

Week 8 Introduction to the maquette in OM. Student presentations.


Week 13 Final project presentations and critique, part one.

Week 14 Final project presentations and critique, part two.

Week 15 Final project presentations and critique, part three.

Bibliography
Books
NEW COURSES

Conservatory of Music

MUSC.7375X: Interactive Computer Music

45 hours; 3 credits

Bulletin Description: Theory, production, and literature of interactive music, with a focus on developing students’ own skills and creative works. Topics include interactive music programming, compositional strategies, coordination of audio with video, and techniques of professional live performance.

Prerequisite: Permission of director.

Frequency of Offering: Once per year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale: The purpose of this course is to lead students from a beginner’s perspective of interactive music techniques to a solid understanding and ability. Tools introduced in courses Computer Music 1, Computer Music 2, Building Electronic Music Instruments, and Computer-Assisted Composition will be integrated, applied, and expanded upon.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Provide students with advanced study and practice in development of stage-ready, professional-quality interactive music compositions.
- Expand students’ knowledge of canonical and recent literature and theory in the field of interactive music.
- Refine and develop students’ skill sets in interactive music composition, instrument design, and programming.
OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly readings, with quizzes and discussions to determine comprehension.
- Completion of weekly composition assignments, with in-class critique and individual feedback from instructor.
- Completion of a large-scale final project, and a formal presentation in a concert or gallery setting.

Course Outline for Interactive Computer Music

DATE: Topics:
Week 1 Introduction. Discussion of plan for semester. Theories of interactivity.

Week 2 Touchstone works from the history of interactive music. Comparison and discussion.

Week 3 Comparative presentation of current platforms for interactive music composition.

Week 4 Strategies and technologies for interactive performance, part one.

Week 5 Strategies and technologies for interactive performance, part two.

Week 6 Strategies and technologies for interactive performance, part three.

Week 7 Capture, analysis, and composition with real time performance data and extant data sets, part one.

Week 8 Capture, analysis, and composition with real time performance data and extant data sets, part two. Final project proposals due.

Week 9 Capture, analysis, and composition with real time performance data and extant data sets, part three.

Week 10 Introduction to techniques of live performance with multimedia technologies, part one.

Week 11 Techniques of live performance with multimedia technologies, part two. Final project in-progress status reports.
Week 12  Techniques of live performance with multimedia technologies, part three.

Week 13  Final presentations and discussion.

Week 14  Final presentations and discussion.

Week 15  Final presentations and discussion.

Bibliography
NEW COURSES

Conservatory of Music

MUSC.7376X: Advanced Interactive Computer Music

45 hours; 3 credits

Bulletin Description:
Advanced topics in theory, production, and literature of interactive music, with a focus on developing students’ own skills and creative works. Topics include advanced interactive music programming, interactive multimedia programming, compositional strategies, composition of audio with video, and techniques of professional live performance.

Prerequisite: MUSC 7375.

Frequency of Offering: Once every year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
The purpose of this course is to advance students from a solid understanding of interactive music techniques to a sophisticated, professional understanding and ability. Tools and concepts introduced in Interactive Computer Music will be applied and expanded upon.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Provide students with advanced study and practice in development of stage-ready, professional-quality interactive music compositions.
- Expand students’ knowledge of canonical and recent literature and theory in the field of interactive music.
- Refine and develop students’ skill sets in interactive music composition, instrument design, and programming.
OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly readings, with quizzes and discussions to determine comprehension.
- Completion of weekly composition assignments, with in-class critique and individual feedback from instructor.
- Completion of a large-scale final project, and a formal presentation of it in a concert or gallery setting.

Course Outline for Advanced Interactive Computer Music

<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics</th>
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<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td>Introduction. Discussion of plan for semester. Review of essential ideas.</td>
</tr>
<tr>
<td><strong>Week 2</strong></td>
<td>Discussion of theories of interactivity. Human factors in performance.</td>
</tr>
<tr>
<td><strong>Week 3</strong></td>
<td>Techniques for relating sound shapes to physical gestures.</td>
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<tr>
<td><strong>Week 4</strong></td>
<td>Strategies for managing performance data.</td>
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<tr>
<td><strong>Week 5</strong></td>
<td>Strategies for analyzing performance data.</td>
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<tr>
<td><strong>Week 6</strong></td>
<td>Strategies for applying data analysis to composition of real-time actions of the computer music system.</td>
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<tr>
<td><strong>Week 7</strong></td>
<td>Advanced programming, part one.</td>
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<tr>
<td><strong>Week 8</strong></td>
<td>Advanced programming, part two. Final project proposals due.</td>
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<tr>
<td><strong>Week 9</strong></td>
<td>Advanced programming, part three.</td>
</tr>
<tr>
<td><strong>Week 10</strong></td>
<td>Techniques of professional live performance with multimedia technologies, part one.</td>
</tr>
<tr>
<td><strong>Week 11</strong></td>
<td>Techniques of professional live performance with multimedia technologies, part two. Final project in-progress status reports.</td>
</tr>
<tr>
<td><strong>Week 12</strong></td>
<td>Techniques of professional live performance with multimedia technologies, part three.</td>
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<tr>
<td><strong>Week 13</strong></td>
<td>Final presentations and discussion.</td>
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</tbody>
</table>
Week 14  Final presentations and discussion.

Week 15  Final presentations and discussion.

Bibliography
NEW COURSES

Conservatory of Music

MUSC.7377X: Seminar in Sonic Arts

45 hours; 3 credits

Bulletin Description:
Presentation of advanced and timely topics to students in sonic arts. Subjects vary from semester to semester. Content chosen by faculty to reflect interesting and innovative concepts and techniques of contemporary relevance to students.

Prerequisite: Permission of director.

Frequency of Offering: Once every other year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
The field of Sonic Arts continues to evolve at the pace of new technologies for sound production and dissemination. The purpose of this course is to provide faculty with a course that will enable them to present students with a similarly-evolving component of their curriculum, one designed to teach students new concepts and technologies, as well as detailed discussion of artists in the field, analysis of works and techniques, and aesthetic assessment of styles and trends.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Provide students with deep investigation of high-level ideas in the field of sonic arts.
- Involve students in critical assessment of recent developments in the field and their relation to historical trends in sonic arts and other media.
- Guide students to develop their own research in response to the topics presented in the classroom.
OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly assigned readings, with quizzes and discussions to determine comprehension.
- One or more short class presentations on topics agreed upon with the instructor that relate to the primary issues of the course.
- Completion of a large-scale project or research paper on a topic related to the course, and a formal presentation of findings to the class.

Course Outline for Seminar in Sonic Arts:

<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics:</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Introduction. Discussion of plan for semester. First assignment.</td>
</tr>
<tr>
<td>Week 2</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
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<tr>
<td>Week 3</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 4</td>
<td>First short presentations.</td>
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<tr>
<td>Week 5</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 6</td>
<td>Second short presentations.</td>
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<tr>
<td>Week 7</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 8</td>
<td>Presentation of plans for final projects. Discussion of materials from assignment and presentation of new concepts by instructor.</td>
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<tr>
<td>Week 9</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
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<tr>
<td>Week 10</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 11</td>
<td>Final project in-progress status reports. Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
</tbody>
</table>
Week 12  Discussion of materials from assignment and presentation of new concepts by instructor.

Week 13  Final presentations and discussion.

Week 14  Final presentations and discussion.

Week 15  Final presentations and discussion.

Bibliography
SECTION A-IV: NEW COURSES

Conservatory of Music

MUSC.7378X: Sequencing/Sampling

45 hours; 3 credits

Bulletin Description:
Instruction in the techniques of contemporary computer technology to create facsimiles of instrumental performances. Application of digital audio workstation (DAW) software to integrate musical ideas and audio into finished compositions.

Prerequisite: Permission of director.

Frequency of Offering: Once every year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
This course will instruct students in the techniques of using contemporary computer technology to create facsimiles of instrumental performances. Students will use digital audio workstation (DAW) software to integrate numerous musical ideas and audio into convincing compositions, using sources of live recordings, sample banks, synthesized virtual instruments, and digital signal processing. Mastery of the industry standard digital audio workstation software, Pro Tools, will be an essential part of this process. Particular attention will be paid to the use of MIDI sample banks to simulate instrumental ensembles and methods by which libraries of samples may be organized and employed to create both convincing illusions of instrumental performances and compelling soundscapes that move beyond the palette of acoustic instrumental sound. Students will complete a series of studies using the technology to hone their skills and will present these etudes for critique by the instructor and peers.

Date of departmental approval: March 11, 2014

Effective date: Fall 2015

LEARNING OBJECTIVES:
- Provide students with understanding of the use of software to emulate instrumental music performances, as practiced by the media scoring industry.
- Involve students in critical assessment of recent developments in the field and their relation to historical trends in scoring music with visual media.

- Guide students to develop their own research in response to the topics presented in the classroom.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly assigned readings, with quizzes and discussions to determine comprehension.

- Midterm examination to assess student comprehension.

- Completion of a large-scale final project or research paper on a topic related to the course, and a formal presentation of findings to the class.

Course Outline for Sequencing/Sampling

DATE: Topics:

Week 1 Brief history of the development of samplers and sequencing and their integration into the scoring industry. Overview of software operation and integration. Pro Tools review.

Week 2 Introduction to MIDI.
Introduction to the digital audio workstation (DAW).

Week 3 Introduction to virtual instruments in DAW environments.
First etude assignment.

Week 4 Further discussion of virtual instruments in a DAW environment.
First assignment critique. Second etude assignment.

Week 5 Standalone sampler software and digital instrument libraries.
Organization and operation.
Second assignment critique. Third etude assignment.

Week 6 Integration of DAW software with sampler software and digital instrument libraries.
Third assignment critique. Fourth etude assignment.

Week 7 Midterm examination.

Week 8 Humanizing MIDI instruments, part one.
Proposals for final projects due.
Week 9  Humanizing MIDI instruments, part two.

Week 10 Combining virtual instruments with acoustic instruments.

Week 11 The techniques and art of a mix for a score, part one. Pro Tools.

Week 12 Techniques and art of a mix for a score, part two. Pro Tools.

Week 13 Presenting works and excerpts for demonstration purposes. Final presentations and discussion.

Week 14 Final presentations and discussion.

Week 15

Bibliography

In addition, a running list of current relevant websites will be maintained throughout the course.
SECTION A-IV: NEW COURSES

Conservatory of Music

MUSC.7385X: Sound Design I

45 hours; 3 credits

**Bulletin Description:**
Introduction to techniques of sound design for music and accompaniment to visual media. Topics include editing and mixing sound to video, digital signal processing to sculpt sounds, and sound synthesis.

**Prerequisite:** Permission of director.

**Frequency of Offering:** Once every year.

**Projected enrollment:** 15

**Clearances Obtained:** Television and Radio, Film, CIS

**Discussion & Rationale:**
Contemporary media art and the contemporary media industry both require convincing sonic components – often referred to as *soundscapes*. That is, not only dialogue (when appropriate) and soundtrack (when appropriate) but also a rich combination of other sounds to blend to create the illusion of a single location, whether real (such as a street corner), science fiction (light sabre duel on a spaceship), or surreal (inside John Malkovich’s head). Sound designers may be called upon to record sounds for placement in an audio environment; to find, edit, and mix existing audio; and/or to create new sounds using a combination of their skills and ingenuity. This course, the first of a two-semester sequence, will train composers in the fundamentals of sound design. Mastery of the industry standard digital audio workstation software, Pro Tools, will be an essential part of this process. Given its focus on students who are composers, the course will move rapidly through basics such as splice editing and basic mixing to more sophisticated topics.

**Date of departmental approval:** March 11, 2014

**Effective date:** Fall 2015

**LEARNING OBJECTIVES:**
- Provide students with solid training in the history and techniques of sound design for visual media.
- Involve students in critical assessment of developments in the field and their relation to historical trends in music and visual media.

- Guide students to develop their own research in response to the topics presented in the classroom.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly assigned readings, with quizzes and discussions to determine comprehension.

- One or more short class presentations on topics agreed upon with the instructor that relate to the primary issues of the course.

- Completion of a large-scale project or research paper on a topic related to the course, and a formal presentation of findings to the class.

Course Outline for Sound Design I:

DATE: Topics:
Week 1 Historical development of sound design for visual media and music. Origin of term ‘sound design.’ Review of essential skills: audio editing and mixing. Use of DAW software. Pro Tools.
Week 2 Editing dialogue. Mixing dialogue with environmental sounds.
Week 3 Dubbing dialogue to existing video. Using found sounds to re-create environment for scene.
Week 4 Use of sound libraries for environmental and special effects. Use of delays and reverberation. Short presentations 1.
Week 5 The art of foley. Short presentations 2,
Week 6 Balancing dialogue, environmental sounds, and musical soundtrack. Compressors and gates. Short presentations 3.
Week 7 Mixing to highlight intended focus in a scene. Mixing to enhance the psychological state intended to be conveyed by a scene. Expanders, companders, and limiters. Short presentations 4. Proposals for final projects due.
Week 8 Use of filters and equalization. Mixing to create and enhance flow in visual media. Short presentations 5.
Week 9  Use of digital signal processing on existing audio to emphasize and enhance visual media, part one.

Week 10 Use of digital signal processing on existing audio to emphasize and enhance visual media, part two.

Week 11 Case studies: Breakdown and 24 (TV series)

Week 12 Case studies: Wall-E and Eraserhead.

Week 13 Final presentations and discussion.

Week 14 Final presentations and discussion.

Week 15 Final presentations and discussion.

Bibliography
In addition, a running list of current relevant websites will be maintained throughout the course.
NEW COURSES

Conservatory of Music

MUSC.7635X: Special Topics in Sonic Arts

45 hours; 3 credits

Bulletin Description:
Presentation from regular and guest faculty of advanced and timely topics in sonic arts. Course subjects will vary from semester to semester. Content will be chosen by faculty to reflect interesting and innovative concepts and techniques of great value to students.

Prerequisite: Permission of director.

Frequency of Offering: once every other year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
The field of Sonic Arts continues to evolve at the pace of new technologies for sound production and dissemination. The purpose of this course is to provide faculty with a venue that will enable them to instruct students in a subject that is not part of the regular curriculum but which merits attention and would benefit the students artistically and professionally.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Provide students with deep investigation of a specific focused topic in the field of Sonic Arts.

- Involve students in critical assessment of recent developments in the field and their relation to historical trends in sonic arts and other media.

- Guide students to develop their own research in response to the topics presented in the classroom.
OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly assigned readings, with quizzes and discussions to determine comprehension.
- One or more short class presentations on topics agreed upon with the instructor that relate to the primary issues of the course.
- Completion of a large-scale project or research paper on a topic related to the course, and a formal presentation of findings to the class.

Course Outline for Special Topics in Sonic Arts:
<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction. Discussion of plan for semester. First assignment.</td>
</tr>
<tr>
<td>Week 2</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 3</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 4</td>
<td>First short presentations.</td>
</tr>
<tr>
<td>Week 5</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 6</td>
<td>Second short presentations.</td>
</tr>
<tr>
<td>Week 7</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 8</td>
<td>Presentation of plans for final projects. Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 9</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 10</td>
<td>Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
<tr>
<td>Week 11</td>
<td>Final project in-progress status reports. Discussion of materials from assignment and presentation of new concepts by instructor.</td>
</tr>
</tbody>
</table>
Week 12  Discussion of materials from assignment and presentation of new concepts by instructor.

Week 13  Final presentations and discussion.

Week 14  Final presentations and discussion.

Week 15  Final presentations and discussion.

Bibliography
NEW COURSES

Conservatory of Music

MUSC.7644X: Analysis of Electroacoustic Music

45 hours; 3 credits

Bulletin Description:
In-depth study of electroacoustic music works. Discussion of compositional intent and techniques, technological tools and their employment, as well as sonic results and ways to understand works in terms of form and structure, with particular emphasis on methods to depict musical elements such as timbre that may be of primary importance in electroacoustic works but have little mode of representation in traditional Western music notation.

Prerequisite: permission of director.

Frequency of Offering: Once every other year.

Projected enrollment: 20

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
This course will provide students with tools and the experience of in-depth study of exemplary works of electroacoustic music. The methods and materials of electroacoustic music often include traditional musical elements such as pitch, rhythm, and formal shape. However, many exemplary works of electroacoustic music do not quantify pitch to scales or rhythmic values that may be represented in Western music notation. In this course students will be introduced to analytical techniques designed for electroacoustic music and will be challenged to develop analyses that are appropriate to individual pieces of music.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Develop an understanding of approaches to electroacoustic music composition.
- Gain understanding of the problems and possibilities of analyzing electroacoustic music as well as issues related to representation of analytical findings.

- Engage in critical dialogue regarding the works discussed and techniques for analyzing them.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of ten project assignments during the semester to demonstrate students’ understanding of concepts and ability to apply them in a creative context.

- Participation in classroom discussion of topics to express students’ perceptions of course materials, using appropriate vocabulary and concepts.

- An in-class multimedia presentation on a topic agreed upon with the instructor that explores an aspect of course content.

- A large-scale final project that applies concepts and techniques learned in the class within the context of a new creative work.

Course Outline for Analysis of Electroacoustic Music:

<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction, historical context, and essential problems of analyzing electroacoustic works as compared to acoustic music.</td>
</tr>
<tr>
<td>Week 2</td>
<td>Overview of electroacoustic styles and salient musical information to be analyzed in regards to each.</td>
</tr>
<tr>
<td>Week 3</td>
<td>Introduction to software tools and techniques for analysis.</td>
</tr>
<tr>
<td>Week 4</td>
<td>Further discussion of software tools and techniques for analysis.</td>
</tr>
<tr>
<td>Week 5</td>
<td>Analysis of musique concrète. Sound objects, classification, distance of relatedness and how to quantify and classify.</td>
</tr>
<tr>
<td>Week 6</td>
<td>Analysis of synthesized sounds with latticed pitch materials. Representation of alternate approaches to pitch organization.</td>
</tr>
<tr>
<td>Week 7</td>
<td>Analysis of rhythm in and outside of latticed organization. Issues and problems regarding analytical representation.</td>
</tr>
</tbody>
</table>
Week 8  Analysis and representation of algorithmic approaches to sound composition and musical forms. Presentation of proposals for final projects.

Week 9  Analysis and discussion of *Chiaroscuro* by Francis Dhomont

Week 10 Analysis and discussion of *Stria* by John Chowning.

Week 11 Analysis and discussion of *Riverrun* by Barry Truax.

Week 12 Analysis and discussion of *Neither Anvil nor Pulley* by Dan Trueman

Week 13 Final presentations and critique.

Week 14 Final presentations and critique.

Week 15 Final presentations and critique.

Bibliography
NEW COURSES

Conservatory of Music

MUSC.7660X: History of Electronic and Computer Music

45 hours; 3 credits

Bulletin Description:
History of electronic music from its precursors in the late 1800s to the present. Study of the development of instrument technology, compositional ideas, and musical styles. Introduction to electronic and computer music from diverse periods. Additional emphasis on music technologies in pop music and cross-influences among styles.

Prerequisite: Permission of director.

Frequency of Offering: Once every other year.

Projected enrollment: 20

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
During the twentieth century, new approaches to music composition and performance arose in tandem with developments in electronic and in particular computer technology. For practitioners of electronic music, it is vital to be aware of this history in order to create informed new works. This course will familiarize students with the sounds, forms, technologies, and compositional concepts that have developed during the last century. Topics will include the development of electronic instruments, musique concrète, elektronische Musik, computer music, multichannel composition, interactive music, sampling, sound synthesis, and related subjects.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Introduce students to historical timeline of electronic music ideas, sounds, practitioners, and sociological context.
- Develop student’s ability to identify stylistic attributes and discuss works using correct terminology and theoretical frameworks.

- Lead students to produce their own written research on historical topics in the field of electronic music.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly reading and listening assignments, to be assessed via written response papers.

- Participation in class discussions and required posts to the class blog, using appropriate vocabulary and concepts.

- Writing of a final research paper on a historical subject in the field of electronic music and presentation of results to the class.

Course Outline for History of Electronic and Computer Music:

DATE       Topics

Week 1     Introduction and summary of music technology before advent of electricity: Greeks, organs as synthesizers, musical games, player piano, etc. General concepts: Algorithms, synthesis, recording/automated performance


Week 3     Elektronische Musik & Stockhausen: Studie 1, Studie 2, Gesang der Jünglinge, Kontakte, Hymnen, etc.

Week 4     Edgard Varèse and Iannis Xenakis. Raymond Scott and early commercial applications. Other early tape music: Berio, Koenig, Pauline Oliveros, etc.


Week 6     Analog synthesizers: Robert Moog. Don Buchla, Morton Subotnick, Hugh LeCaine, Laurie Spiegel, Davidovsky, etc.

Week 7     Synthesizers in pop & related music of 1960s-1980s: Wendy Carlos, Kraftwerk, Pink Floyd, Tangerine Dream, Devo, space music, etc.
Week 8  Computer Music 1: Max Mathews, James Tenney, Jean-Claude Risset, Francois Bayle, Charles Dodge, John Chowning.


Week 10  Computer Music 3: Curtis Roads, Robert Normandeau, Dan Trueman, Natasha Barrett, etc.

Week 11  Disco, DJs, and Hip-hop: Grandmaster Flash, Public Enemy, De La Sol, etc.

Week 12  Techno 1: Derrick May, Juan Atkins; house, ambient techno, drum and bass, etc.

Week 13  Techno 2: Industrial, jungle, trip hop, IDM, raves, etc. Contemporary electronic music: DJ Shadow, Aphex Twin, Autechre, Puzzleweasel, etc.

Week 14  Final project presentations.

Week 15  Final project presentations.

Bibliography


NEW COURSES

Conservatory of Music

MUSC.7661X: History of Sound Art

45 hours; 3 credits

Bulletin Description:
History and theory of art utilizing the medium of sound. A chronological survey from Futurism, Dada, and Surrealism through Fluxus, minimalism, conceptual art, sound poetry, sound sculpture, installation art, radio art, performance art, sound walks, and noise.

Prerequisite: permission of director.

Frequency of Offering: once every other year.

Projected enrollment: 15

Clearances Obtained: Art, Television and Radio, Film, CIS

Discussion & Rationale:
The term “sound art” was first used in the 1980s, by which time it already referred to a rich, decades-long tradition of artistic practices involving the medium of sound. Histories of sound art typically extend backwards to the Italian Futurist composer Luigi Russolo’s 1913 manifesto “The Art of Noises.” Beginning with the historical avant-gardes (Futurism, Dada, Surrealism), we will construct a chronology of the art of sound conceived as distinct from or radically expanding upon the art of music. Particular attention will be paid to the works of Vito Acconci, Laurie Anderson, Maryanne Amacher, John Cage, Janet Cardiff and George Bures Miller, Brian Eno, Luc Ferrari, Christina Kubisch, Christian Marclay, Bruce Nauman, Yoko Ono, Kurt Schwitters, and Yasunao Tone.

“History of Sound Art” will be an important component of the curriculum of the proposed M.F.A. program in Sonic Arts. This course is likely to appeal to students in the Conservatory of Music’s composition program, in the Performance and Interactive Media Arts (PIMA) program, and in the Art Department’s M.F.A. program.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014
LEARNING OBJECTIVES:

- Develop a broad, integrated understanding of sound art through coverage of key cultural texts.
- Develop critical skills to connect diverse cultural texts within social/historical contexts.
- Develop skills to carry out primary and secondary text-based library research.
- Develop skills to communicate through well-organized expository prose writing.

OUTCOMES ASSESSMENT:

Students will demonstrate their ability to meet the stated learning objectives by:

- Writing a 15-page library research paper on an artist, individual work of art, or theoretical concept relating to sound art. Strong emphasis will be placed on writing style as well as the content of the paper.
- A 500-word proposal and annotated bibliography will be due midway through the semester to insure proper feedback on research topics.
- A mid-term exam to evaluate student understanding of assigned readings and classroom discussions.
- An in-class multimedia presentation related to their research topic.

Course Outline for History of Sound Art:

**Week 1:** What is sound art? Framing the object of study. The category of sound art as productive anachronism. Surveying the most recent developments.

**Week 2:** Historical avant-gardes: Futurism, Dada, Surrealism (Luigi Russolo, Kurt Schwitters)

**Week 3:** John Cage and the uses of chance and indeterminacy

**Week 4:** Idiosyncratic/unconventional notations and scoring (Cage, Cornelius
Week 5: Fluxus, text-scores, and the challenge to become “post-Cage” (La Monte Young, Yoko Ono)

Week 6: The soundscape and environmental sound (R. Murray Schafer, Luc Ferrari)

Week 7: Sound in performance art and experimental film and video (Vito Acconci, Bruce Nauman)

Week 8: Midterm examination

Week 9: Early sound installations (Max Neuhaus, Bruce Nauman)

Week 10: Sound installations, pt. 2; site-specific sound (Maryanne Amacher)

Week 11: Sound and conceptual art; radio art (Glenn Gould, Gregory Whitehead)

Week 12: Sound and architecture; sound walks (Christina Kubisch, Janet Cardiff and George Bures Miller)

Week 13: Quotation, appropriation, and cultural recycling (Christian Marclay, Kenneth Goldsmith)

Week 14: Music by artists (Rodney Graham, Albert Oehlen)

Week 15: Digital technology and future directions

Bibliography:


30. Schafer, R. Murray. The Soundscape: Our Sonic Environment and the Tuning of the
NEW COURSES

Conservatory of Music

MUSC.7662X: History of Popular Music and Technology

45 hours; 3 credits

Bulletin Description:
History of the use of electronic technology in popular music, 1900 to the present. Discussion of technologies themselves as well as their impact on music styles, adaptation and innovations by musicians in their use of technology in composition and performance.

Prerequisite: permission of director.

Frequency of Offering: once every other year.

Projected enrollment: 15

Clearances Obtained: Television and Radio, Film, CIS

Discussion and Rationale:
The history of popular music is in large part a history of its recorded artifacts. This course considers aesthetic developments in pop music in relationship to developments in recording technology and the recording and broadcast industries. The emphasis will be on the ways that advancements in recording technology and media dissemination shaped the development of 20th century American popular forms including blues, country, jazz, rock’n’roll, soul, hip hop, and electronic music. What effect did electrical recording have on the art and industry of making records? How have musical styles been affected by the introduction of the microphone, amplification, magnetic tape, sampling, or digital recording? What have been the effects of successive music-delivery systems, e.g., the 78 r.p.m. record, the 45, the LP, the compact disc, and mp3 files? The significations of race, class, gender, and social identity as enacted in the creation and reception of these musics will be central to our investigation of the function of popular music in American society. No reading knowledge of music is required for this course.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Develop a broad, integrated understanding of music technology employed in popular music through coverage of key cultural texts.

- Develop critical skills to connect diverse cultural texts within social/historical contexts.

- Develop skills to carry out primary and secondary text-based library research.

- Develop skills to communicate through well-organized expository prose writing.

OUTCOMES ASSESSMENT:

Students will demonstrate their ability to meet the stated learning objectives by:

- Writing a 15-page library research paper on an artist, individual work of music, or theoretical concept relating to technology in popular music. Strong emphasis will be placed on writing style as well as the content of the paper.

- A 500-word proposal and annotated bibliography will be due midway through the semester to insure proper feedback on research topics.

- A mid-term exam to evaluate student understanding of assigned readings and classroom discussions.

- An in-class multimedia presentation related to their research topic.

Course Outline for History of Popular Music and Technology:

**Week 1**  Introduction.

**Week 2**  Reading: Mark Katz, “Introduction,” “Causes”, Michael Chanan, “Record Culture.”

**Week 3**  Reading: Chanan, “Recording Electrified”, Elijah Wald, “Race Records: Blues Queens, Crooners, Street Singers, and Hokum.”


**Week 5**  Reading: Bob Dylan, “The Lost Land” (pp. 25-73), Katz, “Aesthetics Out of
Exigency: Violin Vibrato and the Phonograph.”

**Week 6**  

**Week 7**  
Reading: Yuval Taylor, “Tonight’s the Night: Neil Young and Being ‘More Real’”; David Thomas, “Ghoulardi: Lessons in Mayhem from the First Age of Punk” (*Listen Again*).

**Week 8**  
Midterm examination.

**Week 9**  
Reading: Jim Fricke and Charlie Ahearn, excerpts from *Yes Yes Y’All*.  
IN-CLASS PRESENTATIONS 1

**Week 10**  
Reading: Jim Fricke and Charlie Ahearn, excerpts from *Yes Yes Y’All*, “The Turntable as a Weapon: Understanding the DJ Battle”; Michaelangelo Matos, “All Roads Lead to ‘Apache’” (*Listen Again*).  
IN-CLASS PRESENTATIONS 2

**Week 11**  
Reading: Joseph G. Schloss, “‘It Just Doesn’t Sound Authentic’: Live Instrumentation versus Hip-Hop Purism.”  
IN-CLASS PRESENTATIONS 3

**Week 12**  
IN-CLASS PRESENTATIONS 4

**Week 13**  
IN-CLASS PRESENTATIONS 5

**Week 14**  
IN-CLASS PRESENTATIONS 6

**Week 15**  
ANNOTATED BIBLIOGRAPHY DUE.
Bibliography:


NEW COURSES

Conservatory of Music

MUSC.7664X: Acoustics and Psychoacoustics of Music

30 hours; 2 credits

Bulletin Description:
Introduction to the fundamental concepts of acoustics and the human cognitive functions regarding auditory perception, with a particular focus on music.

Prerequisite: Permission of director.

Frequency of Offering: Once every year.

Projected enrollment: 20

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
Although this course is proposed as part of the Sonic Arts M.F.A. program, it will serve the entire Conservatory student population. For those whose art is about making sound, it is valuable to understand how sound operates physically and how the human auditory system processes sound waves. These subjects relate directly to issues of harmony, dissonance, pitch perception, dynamics, and how performances or compositions might be adjusted based on the environment in which the music will be heard.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014

LEARNING OBJECTIVES:
- Provide students with introduction to fundamentals of musical acoustics.
- Provide students with introduction to fundamentals of psychoacoustics.
- Give students understanding of how acoustics and psychoacoustics might be used advantageously in situations of music composition and performance.
OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of weekly assignments and readings, with discussions in class to determine comprehension.
- Occasional quizzes to test comprehension.
- Mid-term examination.
- Final examination.

Course Outline for Acoustics and Psychoacoustics:

<table>
<thead>
<tr>
<th>DATE:</th>
<th>Topics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Instantaneous phase, free vibrators, natural modes, multimode systems.</td>
</tr>
<tr>
<td>Week 2</td>
<td>Spectrum, resonance, adding waves, transducers, electronic instrumentation.</td>
</tr>
<tr>
<td>Week 3</td>
<td>Sound waves in matter, polarization, speed of sound.</td>
</tr>
<tr>
<td>Week 4</td>
<td>Traveling waves in space and time, wavelength.</td>
</tr>
<tr>
<td>Week 5</td>
<td>Wave interference, beats, reflection, refraction, diffraction.</td>
</tr>
<tr>
<td>Week 6</td>
<td>Standing waves; standing waves on strings and in pipes.</td>
</tr>
<tr>
<td>Week 7</td>
<td>Sound radiation, intensity, sound level, decibels. Midterm examination.</td>
</tr>
<tr>
<td>Week 8</td>
<td>Auditory anatomy and tuning. Auditory physiology.</td>
</tr>
<tr>
<td>Week 9</td>
<td>Loudness and pitch perception.</td>
</tr>
<tr>
<td>Week 10</td>
<td>Localization of sound. Room acoustics, transmission and reverberation.</td>
</tr>
<tr>
<td>Week 11</td>
<td>Audio and electroacoustics transducers, Distortion and noise.</td>
</tr>
<tr>
<td>Week 12</td>
<td>Loudspeakers. Digital audio.</td>
</tr>
<tr>
<td>Week 13</td>
<td>Vocal anatomy, formants, and spectrograms.</td>
</tr>
<tr>
<td>Week 14</td>
<td>Brass instruments. Woodwind instruments.</td>
</tr>
<tr>
<td>Week 15</td>
<td>String instruments. Percussion instruments.</td>
</tr>
</tbody>
</table>
Week 15  Final examination.

Bibliography

   http://philomel.com/musical_illusions/oncd2.html
NEW COURSES

Conservatory of Music

MUSC.7870X: Sonic Arts Capstone Seminar
45 hours; 3 credits

Bulletin Description:
Opportunity for Sonic Arts majors to develop their MFA capstone projects in a workshop setting under the guidance of a member of the Sonic Arts faculty. Composition, research, design, technical development, critical writing, and oral presentations. Assignment of readings, listenings, and analysis of works as models, as deemed appropriate by the faculty. Expectation of significant progress towards completion of the MFA capstone project, for performance or exhibition.

Prerequisite: Permission of director.

Frequency of Offering: Once per year.

Projected enrollment: 10

Clearances Obtained: Television and Radio, Film, CIS

Discussion & Rationale:
The Sonic Arts M.F.A. capstone project is the student’s culminating effort toward the degree. This course supervises and evaluates work towards the M.F.A. capstone project that will be completed in the following semester, including composition, research, and technical development. Final-year Sonic Arts students will regularly and formally present work-in-progress in the form of in-class rehearsals, excerpts from sound recordings, preliminary versions of sound installations, presentations of programming work, etc. Students will prepare an annotated bibliography related to their capstone project, and use this bibliography to assign readings and lead in-class discussion. The aim is that students will become more professional about historicizing and contextualizing their own work while at the same time helping their classmates to become better-informed interlocutors. At the beginning of the semester, various methods for structuring in-class responses to student work will be considered by the group as a whole. There will also be a fifteen-page essay due at the end of the semester, in which students document and reflect on the process of creating the capstone work.

Date of departmental approval: March 11, 2014

Effective date: Fall 2014
LEARNING OBJECTIVES:
- Develop student’s technical skills relating to sound composition.
- Develop student’s creative style and critical skills to historicize and contextualize students’ own creative efforts.
- Develop technical skills to execute capstone project, whether involving live performance, programming, sound recording, sound installation, instrument building, or a combination of these.
- Engage in critical dialogue regarding methodologies, aesthetics, and presentation of finished work.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Completion of assigned readings, listening, and analysis assignments and participation in class discussions.
- Developing an accomplished sound composition (performance, recording, and/or installation) and regularly presenting this work in class.
- Writing a 15-page paper on the artistic contexts out of which the student’s capstone project emerges.
- Preparing an annotated bibliography, assigning readings, and leading in-class discussion.

Course Outline for Sonic Arts Capstone Seminar:

<table>
<thead>
<tr>
<th>DATE</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction. Review of existing work. Discussion of plans for capstone project.</td>
</tr>
<tr>
<td>Week 2</td>
<td>Annotated bibliographies posted online and discussed in class.</td>
</tr>
</tbody>
</table>
| Week 3 | Presentation of work-in-progress (two projects)  
          Student-led discussion of assigned reading |
| Week 4 | Presentation of work-in-progress (two projects)  
          Student-led discussion of assigned reading |
Week 5  Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

Week 6  Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

Week 7  Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

Week 8  Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

Week 9  Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

Week 10 Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

Week 11 Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

DRAFT OF ESSAY DUE

Week 12 Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

Week 13 Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

Week 14 Presentation of work-in-progress (two projects)  
Student-led discussion of assigned reading

COMPLETED DRAFT OF CAPSTONE PROJECT DUE

Week 15 Conclusion  
FINAL ESSAY DUE

Bibliography
APPENDIX B: DESCRIPTION AND SYLLABI OF EXISTING COURSES
EXISTING COURSES

Conservatory of Music

MUSC.7371: Computer Music I

45 hours; 3 credits

Bulletin Description:

Prerequisite: Permission of director.

Frequency of Offering: Once every year.

Projected enrollment: 15

Discussion & Rationale:
This course is the first in a two-semester sequence and is an introduction to music composition with computer software and hardware. It begins with an overview of principles of how sound propagates in space and how the human body and brain interpret audio signals. Students use computer music hardware and software to create, transform, record, edit, and mix musical sounds. The course treats topics of electroacoustic sound and methods of composition that are distinct to this medium, with a focus on concepts derived from musique concrète, acousmatic music, and related styles, coupled with explanation and application of digital signal processing techniques.

LEARNING OBJECTIVES:
- Develop students’ understanding of historical and aesthetic streams of electroacoustic music.
- Develop students’ understanding of methods of digital signal processing, both theoretically and in terms of practical applications.
- Develop students’ creative style and understanding of its relationship to existing work.
OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Quizzes on readings, listening assignments, and class material.
- In-class discussions of concepts in readings and listening assignments.
- Completion of a final project using the techniques and technologies presented in class.

Course Outline for Computer Music I:

Week 1  Introduction to the course. Idea of using all sounds as musical sources. Notion of musique concrète. Essentials of Psychoacoustics, part 1. Introduction to audio editing and audio collage.


Week 3  Introduction to concepts of acousmatic music. Theory and use of delay lines. Multi-track mixing.

Week 4  Acousmatic music, part 2. Theory and uses of reverberation.

Week 5  Introduction to soundscape composition. Filters: theory and use.

Week 6  Plunderphonics. Filter-based effects: comb filter, flanger, phaser, chorusing, vocoder, resonators.

Week 7  Strategies for composing with sampled sounds, part 1. Amplitude effects: overdrive/distortion, ring modulation, compression, limiting, noise cancellation, gating.

Week 8  Strategies for composing with sampled sounds, part 2.

Week 9  Fourier theorem. FFTs, part 1. Gating and filtering with FFTs, bin shifting, phase vocoders, pitch shifters, time stretching.

Week 10  FFTs, part 2. Spectral delays, spectral filtering, convolution, Meapsoft.

Week 11  Multichannel audio, part 1. Theories of spatialization (Ambisonics, Dolby Surround sound, point source vs. continuous, etc.)

Week 12  Multichannel audio, part 2. 4 and 8-channel mixing in Pro Tools.
Week 13     Granular sound: time stretching, pitch shifting, rhythmic streams, sound clouds.  
First draft of final project due.

Week 14     Finished final projects due. Discussion and critique.

Week 15     Class concert.

Bibliography
EXISTING COURSES

Conservatory of Music

MUSC.7372: Computer Music II

45 hours; 3 credits

Bulletin Description:
Application of digital signal processing techniques to music composition. Computer analysis of sound and speech, digital filtering techniques, computer speech synthesis. Completion of a short work is required. Computer facilities are available for student use.

Prerequisite: Permission of director.

Frequency of Offering: Once every year.

Projected enrollment: 15

Discussion & Rationale:
This course is the second in a two-semester sequence on music composition with computer software and hardware. It features an investigation of sound synthesis techniques, with particular attention to modular synthesis, both analog and digital. Students use music synthesis hardware and software to create, transform, record, edit, and mix musical sounds, both in the studio and in live performance.

LEARNING OBJECTIVES:
- Develop students’ understanding of historical and aesthetic streams of electronically-synthesized music.
- Develop students’ understanding of methods of sound synthesis, both theoretically and in terms of practical applications.
- Develop students’ creative style and understanding of its relationship to existing work.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Quizzes on readings, listening assignments, and class material.
- In-class discussions of concepts in readings and listening assignments.
- Completion of a final project using the techniques and technologies presented in class.

**Course Outline for Computer Music I:**

**Week 1**  Introductions. Syllabus review. Introduction to general concepts of modular sound synthesis.


**Week 3**  Additive synthesis.

**Week 4**  Extensions of wavetable synthesis. Introduction to LFOs to control music.

**Week 5**  Introduction to filters and subtractive synthesis.

**Week 6**  Modulation synthesis, part one. Ring modulation and amplitude modulation.

**Week 7**  Modulation synthesis, part two. Frequency modulation and phase distortion synthesis.

**Week 8**  Sampling synthesis and multisampling. Recording and playing back audio buffers. Building musical systems, part one. **Plans for final projects due.**

**Week 9**  Granular synthesis. Building musical systems, part two.

**Week 10**  EQ, Compression, and limiters. Aspiring to professional-quality audio input and output onstage. Building musical systems, part three.

**Week 11**  Physical modeling synthesis (waveguides, Karplus-Strong, etc.) **First drafts of final projects due.**

**Week 12**  Analysis and re-synthesis: LPC and FFT. Second drafts of final projects for concert are due.
**Week 13**  
Penultimate drafts of final projects are due. Review and critique.

**Week 14**  
**Finished final projects due.** Review and critique.  
Preparations for concert.

**Week 15**  
Class concert.

**Bibliography**

EXISTING COURSES

Conservatory of Music

MUSC.7373X: Building Electronic Music Instruments

45 hours; 3 credits

Bulletin Description:
In this course students learn how to design, program, and build their own electronic music instruments and installations, including both hardware and software. Topics include essentials of electronic circuits, interfacing them with computers, and instrument programming. Although the focus is on music, many aspects of the course topics are also applicable to interactive electronic art and theater.

Prerequisite: MUSC 3262, MUSC 7372 or PIMA 7741, or permission of instructor.

Frequency of Offering: Once every other year.

Projected enrollment: 16

Discussion & Rationale:
As the recent Middle States Review has stated, it is imperative for Brooklyn College to continue to provide students with an educational experiences that expose them to new technologies. This course represents one aspect of the Conservatory of Music’s attempt to instruct students in technological tools that could enhance their professional productivity. The Conservatory of Music’s goals for student learning are to train musicians as artists and as professionals able to start and sustain careers. Given the revolutionary technologies for music creation and dissemination that arose during the last century, we feel that it is valuable to give students the chance to spend an entire semester becoming oriented and gaining experience with the creation of electronic music instruments, both hardware and software. These skills will help students understand the physics of musical sound, hone their abilities in composition, introduce them to electronic design, and develop cross-disciplinary knowledge that will provide them with valuable advantages in the professional world.

LEARNING OBJECTIVES:
- That students understand essential electronic components, microcontrollers, microcontroller programming, and the use of these for interactive music performance and composition.

- That students gain competency in computer programming to algorithmically control microcontrollers and software instrument systems.
- That students learn to systematize creative ideas and realize them as software and/or hardware instruments for performance.

OUTCOMES ASSESSMENT:
Students will demonstrate their ability to meet the stated learning objectives by:
- Students complete 10 or more weekly lab assignments.
- Students learn to analyze existing instrument systems and apply this knowledge in their assignments.
- Students express through speaking and writing their perceptions of course materials, using appropriate vocabulary and concepts.
- Students create one sophisticated and fully-functional instrument as a final project for the semester.

Course Outline for Building Electronic Music Instruments:

Week 1  Semester introduction and overview. Phone coil stethoscope. Speaker as microphone and microphone as speaker. Essentials of electricity.

Week 2  Introduction to the Arduino microcontroller. Comparing several models of Arduino. Types of wire and audio cable. Intro to circuit-bending and our first bend. Building a piezo contact microphone and piezo buzzer. Experiments with these.

Week 3  Electricity, part two, including Ohm’s law. Making piezo-plus-transformer-driven resonators. Experiments with these.


Week 5  Electronic components, part two (potentiometers, capacitors and concept of voltage divider). Making a simple Hex Schmidt Trigger IC-based synthesizer, start to finish.

Week 6  Electronic components, part three. Making a quad NAND gate synthesizer, start to finish.

Week 7  Electronic components, part four. Finishing your creations: human
factors, robustness, visual design, and doing it on the cheap. Making a third IC-based synthesizer, start to finish.

Week 8  
Electronic components, part four. Concepts of algorithms and processes in programming. Discussion of processes and programming as used by artists and musicians. Introduction to programming the Arduino. Simple first Arduino projects.

Week 9  

Week 10  
More Arduino programming (loops, delays, function calls, etc.). Using additional sensors with Arduino (pressure, ultrasonic, infrared, etc.) Simple knock sensor. Using multiple sensors simultaneously.

Week 11  
More Arduino programming. Review of basic electrical concepts. Introduction to motors, solenoids, and relays, and using them with Arduino.

Week 12  

Week 13  
Work on and discussion of final projects in-progress. Lab time.

Week 14  
Practical advice for using handmade electronics onstage and in long-running installations. Work on and discussion of final projects in-progress. Lab time.

Week 15  
Public showing and critique of final projects.

Bibliography
APPENDIX C: TABLE 1b: GRADUATE PROGRAM SCHEDULE
### Table 1b: Graduate Program Schedule: M.F.A. Sonic Arts

- **Indicate academic calendar type:** _x_ Semester  _ _ Quarter  _ _ Trimester  _ _ Other (describe)
- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show how a typical student may progress through the program; copy/expand the table as needed.

#### Term: Fall 1
<table>
<thead>
<tr>
<th>Course Number &amp; Title</th>
<th>Credits</th>
<th>New</th>
<th>Prerequisite(s)</th>
</tr>
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<tbody>
<tr>
<td>MUSC7371G Computer Music</td>
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<td>Permission of Program Director</td>
</tr>
<tr>
<td>MUSC7015X Techniques of Recording Music</td>
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<td>Permission of Program Director or MUSC or MUSC70</td>
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<td>MUSC7331X Sonic Arts Composition I</td>
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<td>Electives</td>
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**Term credit total:** 15

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<td>MUSC7332</td>
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<td>MUSC7334X Sonic Arts Composition IV</td>
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<td>MUSC7016 Advanced Audio Recording</td>
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**Term credit total:** 15

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**Term credit total:**

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<th>Prerequisite(s)</th>
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**Term credit total:**

#### Program Totals:
| Credits: 60 | Identify any comprehensive, culminating element(s) (e.g., thesis or examination), including course number if applicable: |

**New:** indicate if new course  **Prerequisite(s):** list prerequisite(s) for the noted courses
APPENDIX D: STUDENT ENROLLMENT TABLE
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APPENDIX E: FULL-TIME FACULTY
Table 2: Full-Time Faculty

Faculty teaching at the graduate level must have an earned doctorate/terminal degree or demonstrate special competence in the field. Provide information on faculty members who are **full-time at the institution** and who will be teaching each course in the major field or graduate program. The application addendum for professional licensure, teacher certification, or educational leadership certification programs may provide additional directions for those types of proposals.

<table>
<thead>
<tr>
<th>Faculty Member Name and Title (include and identify Program Director)</th>
<th>Program Courses to be Taught</th>
<th>Percent Time to Program</th>
<th>Highest and Other Applicable Earned Degrees &amp; Disciplines (include College/University)</th>
<th>Additional Qualifications: list related certifications/ licenses; occupational experience; scholarly contributions, etc.</th>
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<tbody>
<tr>
<td>Douglas Cohen</td>
<td>Music Composition, Intermedia, New Media Scoring</td>
<td>20%</td>
<td>B.F.A., California Institute of the Arts; M.F.A., California Institute of the Arts; Ph.D., State University of New York – Buffalo</td>
<td>Douglas Cohen is an intermedia composer and often collaborator with film, performance and folk artists, as well as an early advocate for digital media on the Internet. He organized the NewMusNet Conference of Arts Wire with Pauline Oliveros and later was Arts Wire Systems Coordinator. Cohen is a specialist in American experimental music with particular attention to the work of John Cage, Morton Feldman, and Pauline Oliveros. He co-created and produced the evening length intermedia work imusicircus at Experimental Intermedia in New York and LACE Gallery in Los Angeles (later with the California EAR Unit at the L.A. County Museum of Art) as City Circus events for the John Cage exhibition Rolywholyover a Circus.</td>
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<tr>
<td>Jason Eckardt</td>
<td>Music Composition</td>
<td>10%</td>
<td>B.A., Berklee College of Music, M.A., Columbia University, D.M.A.,</td>
<td>Jason Eckardt’s music has been influenced by his interests in perceptual complexity, performance virtuosity, and self-organizing processes in the natural world. He has been recognized through commissions and awards from Carnegie</td>
</tr>
<tr>
<td>Faculty Name</td>
<td>Program</td>
<td>Degree Details</td>
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<tr>
<td>Douglas Geers</td>
<td>Music Composition,</td>
<td>B.A., Xavier University; M.M., University of Cincinnati College-</td>
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<tr>
<td>Program Director</td>
<td>Electroacoustic Music,</td>
<td>Conservatory of Music; D.M.A., Columbia University.</td>
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<tr>
<td>David Grubbs</td>
<td>Music and Technology</td>
<td>B.A., Georgetown University; M.A., University of Chicago; Ph. D., University of</td>
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</table>

Columbia University

Hall, Tanglewood, the Guggenheim, Rockefeller, Koussevitzky, and Fromm Foundations, the Guggenheim Museum, the ISCM, Deutschen Musikrat, and percussionist Evelyn Glennie. Eckardt's music has been performed at major festivals and recorded on the CRI, Helicon, Metier, Capstone and Mode labels. An active promoter of new music, Eckardt is a co-founder and the Executive Director of Ensemble 21, the contemporary music group. Eckardt's areas of expertise include composition, post-tonal analysis, extended instrumental and vocal techniques, and musical cognition and perception.

Douglas Geers’ work focuses on creative integration of new technologies and multimedia dimensions into concert music, with a continuing emphasis on interactive electroacoustic works. Mr. Geers has had hundreds of known performances of his music worldwide, including numerous international festivals and on programs by acclaimed performers such as Ensemble Fa, Speculum Musicae, The Radio-Television Orchestra of Slovenia, the Center Henri Pousseur, Ensemble Pi, the NODUS Ensemble, the Princeton University Laptop Orchestra (PLOrk), the Verge Ensemble, and Zeitgeist. He has won grants and awards from sources including the MacArthur Foundation, Bush Foundation, Argosy Foundation, McKnight Foundation, Jerome Foundation, Roth-Thompson Foundation, Fulbright Foundation, and others. In 2003 Geers founded the Spark Festival of Electronic Music and Arts, which he directed annually through 2009. He is currently Director of the Center for Computer Music at Brooklyn College, City University of New York.

David Grubbs has released eleven solo albums and appeared on more than 150 commercially-released recordings. He is known for his cross-disciplinary collaborations with writers such as Susan Howe and Rick Moody, and with visual artists such as Anthony McCall, Angela Bulloch, Cosima von Bonin, and Stephen Prina. His work has been presented at the Solomon R. Guggenheim Museum, MoMA, the Tate Modern, and the Centre Pompidou. Grubbs has played in the groups Gastr del Sol, the Red Krayola, the Wingdale Community Singers, Bastro, and Squirrel Bait, and currently directs the Blue Chopsticks record label. His book Records Ruin the Landscape: John Cage, The Sixties, and Sound Recording is under contract to Duke University Press. Grubbs was a 2005-6 grant recipient from the Foundation for Contemporary Art; and his 2000 album The Spectrum Between was named “Album of the Year” in the London Sunday Times.
<table>
<thead>
<tr>
<th>Tania León</th>
<th>Music Composition</th>
<th>B. S., New York University; M. A., Carlos Alfredo Peyrellade Conservatory, Havana, Cuba; M. A., New York University.</th>
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</thead>
<tbody>
<tr>
<td>Miguel Macias</td>
<td>Sound</td>
<td>M.F.A. in Television production, Brooklyn College</td>
</tr>
</tbody>
</table>

Tania León (b. Havana, Cuba) is highly regarded as a composer and conductor and recognized for her significant accomplishments as an educator and advisor to arts organizations. She was awarded the 1998 New York Governor's Lifetime Achievement Award and held the Fromm Residency at the American Academy in Rome. She has received Honorary Doctorates from Colgate University, Oberlin College, and SUNY Purchase and awards from the American Academy of Arts and Letters, National Endowment for the Arts, Chamber Music America, NYSCA, Lila Wallace/Reader's Digest Fund, ASCAP, Guggenheim, and the Koussevitzky Foundation, among others. León was a founding member of the Dance Theatre of Harlem. She instituted the Brooklyn Philharmonic Community Concert Series in 1978 and, in 1994, co-founded the American Composers Orchestra "Sonidos de las Americas Festivals" where she is Music Advisor. Additionally, she served as New Music Advisor to Kurt Masur and the New York Philharmonic from 1993 to 1997. León has been Visiting Lecturer at Harvard University, and Visiting Professor at Yale, Michigan, and the Musikhochschule in Hamburg. She has appeared as guest conductor with the Symphony Orchestra of Marseilles (France), L’orchester de la Suisse Romande, Santa Cecilia Orchestra (Italy), Gewandhausorchester (Germany), Orquesta Sinfónica de Asturias (Spain), and the New York Philharmonic, among others. Her music is available on Nonesuch, Teldec, Naxos, CRI, Albany, Quindecim, Newport Classic, Leonarda, Mode, Innova, and First Edition Records. She has been the subject of profiles on ABC, CBS, CNN, PBS, Univision, and Telemundo as well as several independent films. In 2000 she was named the Tow Distinguished Professor at Brooklyn College, where she has taught since 1985, and was named Distinguished Professor of the City University of New York in 2006. In 2009 she founded the Composers Now Festival in New York City, of which she is also artistic director; and in 2010 she was inducted as a member of the American Academy of Arts and Letters.

Miguel Macias is a radio producer, sound designer, musician and video producer based in Brooklyn, New York. Currently Miguel is an Assistant Professor at the department of Television and Radio at Brooklyn College, Director of the Radio Studies Program and faculty supervisor for WBCR (Brooklyn College Radio). Originally from Sevilla, Spain, Miguel completed an M.F.A in Television production at Brooklyn College and then joined the ranks of New York Public Radio, WNYC, as an Associate Producer. While working at WNYC, he received a Peabody Award in 2006 for the Radio Rookies series. After WNYC, Miguel moved to Los Angeles where he joined the production team of American Public Media’s Marketplace. For two years he was the overnight Associate Producer and Director of the
Marketplace Morning Report. At Marketplace, Miguel also had the opportunity to travel to the Middle East as the Associate Producer and documentarian for the project The Middle East at Work. Miguel's credits include NPR's All Things Considered, NPR's Morning Edition, PRI's The World, PRI's This American Life, ABC Radio National, Youth Radio, and NGO Madre.

WBCR (Brooklyn College Radio)
APPENDIX F: FACULTY TO BE HIRED
Table 4: Faculty to be Hired

If faculty must be hired, specify the number and title of new positions to be established and minimum qualifications.

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<thead>
<tr>
<th>Title/Rank of Position</th>
<th>No. of New Positions</th>
<th>Minimum Qualifications (including degree and discipline area)</th>
<th>F/T or P/T</th>
<th>Percent Time to Program</th>
<th>Expected Course Assignments</th>
<th>Expected Hiring Date</th>
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<td>Assistant Professor</td>
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<td>PH.D. or D.M.A. or M.F.A.</td>
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<td>50%</td>
<td>50% Sonic Arts 50% Media Scoring</td>
<td>Fall 2016</td>
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APPENDIX G: NEW RESOURCES TABLE
### Table 5: New Resources

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<td>Full Time Faculty</td>
<td>$80,000.00</td>
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<td>$83,232.00</td>
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<td>Part Time Faculty</td>
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<td>$29,753.00</td>
<td>$30,348.00</td>
<td>$30,955.00</td>
<td>$31,575.00</td>
</tr>
<tr>
<td>Full Time Staff - CLT</td>
<td>$45,000.00</td>
<td>$45,900.00</td>
<td>$46,818.00</td>
<td>$47,754.00</td>
<td>$48,709.00</td>
</tr>
<tr>
<td>Part Time Staff</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Library (Includes Staffing)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Equipment</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Laboratories</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Supplies &amp; Expenses (Other than Personal Services)</td>
<td>$2,500.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
<td>$3,000.00</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Other</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Total all</td>
<td>$156,670.00</td>
<td>$160,253.00</td>
<td>$163,398.00</td>
<td>$166,606.00</td>
<td>$169,878.00</td>
</tr>
</tbody>
</table>

[1] Specify the inflation rate used for projections.  
[2] Specify the academic year.  
[4] New resources means resources engendered specifically by the proposed program. The new resources from the previous year should be carried over to the following year, new resources with adjustments for inflation, if a continuing cost.  
[5] Specify what is included in "other" category, e.g., student financial aid.
APPENDIX H: PROJECTED REVENUE RELATED TO THE PROPOSED PROGRAM
## Projected Revenue Related to the Proposed Program

<table>
<thead>
<tr>
<th>Revenues¹</th>
<th>1st Year Academic Year²</th>
<th>2nd Year Academic Year³</th>
<th>3rd Year Academic Year⁴</th>
<th>4th Year Academic Year⁵</th>
<th>5th Year Academic Year⁶</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tuition Revenue⁷</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01. From Existing Sources⁸</td>
<td>$150,520.00</td>
<td>$332,469.00</td>
<td>$345,695.00</td>
<td>$332,652.00</td>
<td>$340,237.00</td>
</tr>
<tr>
<td>02. From New Sources⁹</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>State Revenue⁶</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04. From Existing Sources¹⁰</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05. From New Sources¹¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06. Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Revenue⁷</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07. From Existing Sources¹²</td>
<td>$54,000.00</td>
<td>$85,106.00</td>
<td>$87,563.00</td>
<td>$119,990.00</td>
<td>$123,359.00</td>
</tr>
<tr>
<td>08. From New Sources¹²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09. Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Grand Total⁸</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. From Existing Sources¹³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. From New Sources¹³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$204,520.00</td>
<td>$417,575.00</td>
<td>$433,258.00</td>
<td>$452,642.00</td>
<td>$463,596.00</td>
</tr>
</tbody>
</table>

---

¹ Specify the inflation rate used for projections.
² Specify the academic year.
³ Specify how tuition revenue was calculated.
⁴ Existing sources means revenue that would have been received by the institution even if the proposed program were not approved.
⁵ New sources means revenue engendered by the proposed program. The revenue from new sources from the previous year should be carried over to the following year as revenues from new sources with adjustments for inflation, if a continuing source of revenue.
⁶ Public institutions should include here regular State appropriations applied to the program. Independent institutions should estimate Bundy aid generated by degrees awarded in the program.
⁷ Specify what is included in "other" category.
⁸ Enter total of Tuition, State and Other Revenue, from Existing or New Sources.
APPENDIX I: SUPPORTING MATERIALS – EXPENDITURES
## DIRECT OPERATING EXPENSES

Include additional expenses incurred by other programs when satisfying needs of new program. Faculty need should be commensurate with "net section needs" based on enrollment (see "Enroll & Seat Need Projections" tab).

<table>
<thead>
<tr>
<th>Category</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Full Time Faculty Overload (include Summer)</td>
<td>80,000</td>
<td>81,600</td>
<td>83,232</td>
<td>84,897</td>
<td>86,594</td>
</tr>
<tr>
<td>New Full Time Faculty Salary (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Full Time Faculty Overload (include Summer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Faculty Re-assigned Time (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Employee Fringe Benefits (41.6%)</td>
<td>33280</td>
<td>33945.6</td>
<td>34624.512</td>
<td>35316.944</td>
<td>36023.2704</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Full-Time Faculty on Program Exp Worksheet)</td>
<td>$113,280.00</td>
<td>$115,545.60</td>
<td>$117,856.51</td>
<td>$120,213.44</td>
<td>$122,617.67</td>
</tr>
<tr>
<td>Part Time Faculty Actual Salaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part Time Faculty Actual Fringe Benefits (24.3%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Part-Time Faculty Program Exp Worksheet)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Full Time Staff Base Salary (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (41.6%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Full-Time Staff on Program Exp Worksheet)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
</tbody>
</table>

## PART-TIME STAFF (do not include library staff in this section)

<table>
<thead>
<tr>
<th>Category</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Time Staff Base Salary (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Replacement Costs (replacement of full-time faculty - e.g. on release time - with part-time faculty)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Hourly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (24.3%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong> (Links to Part-Time Staff on Program Exp Worksheet)</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
</tbody>
</table>

## LIBRARY

<table>
<thead>
<tr>
<th>Category</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library Staff Full Time (List Separately) CLT</td>
<td>45,000</td>
<td>45900</td>
<td>46818</td>
<td>47754</td>
<td>48709</td>
</tr>
<tr>
<td>Full Time Staff Fringe Benefits (41.6%)</td>
<td>18720</td>
<td>19094.4</td>
<td>19476.288</td>
<td>19865.664</td>
<td>20262.944</td>
</tr>
<tr>
<td>Library Staff Part Time (List Separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part Time Employee Fringe Benefits (24.3%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL (Links to Library on Program Exp Worksheet)</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
<td>Year 5</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>$ 63,720.00</td>
<td>$ 64,994.40</td>
<td>$ 66,294.29</td>
<td>$ 67,619.66</td>
<td>$ 68,971.94</td>
<td></td>
</tr>
</tbody>
</table>

**EQUIPMENT***

- **Computer Hardware**
- **Office Furniture**
- **Other (Specify)**

<table>
<thead>
<tr>
<th>Total (Links to Equipment on Program Exp Worksheet)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
</tbody>
</table>

**LABORATORIES**

- **Laboratory Equipment**
- **Other (list separately)**

<table>
<thead>
<tr>
<th>TOTAL (Links to Laboratories on Program Exp Worksheet)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
</tbody>
</table>

**SUPPLIES AND EXPENSES (OTPS)**

- **Consultants and Honoraria**
- **Office Supplies**
- **Instructional Supplies**
- **Faculty Development**
- **Travel and Conferences**
- **Membership Fees**
- **Advertising and Promotion**
- **Accreditation**
- **Computer Software**
- **Computer License Fees**
- **Computer Repair and Maintenance**
- **Equipment Repair and Maintenance**

**New Total Supplies and OTPS Expenses (Links to Supplies on Program Exp Worksheet)**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 2,500.00</td>
<td>$ 3,000.00</td>
<td>$ 3,000.00</td>
<td>$ 3,000.00</td>
<td>$ 3,000.00</td>
</tr>
</tbody>
</table>

**CAPITAL EXPENDITURES**

- **Facility Renovations**
- **Classroom Equipment**
- **Other (list separately)**

<table>
<thead>
<tr>
<th>TOTAL (Links to Capital Expenditures on Program Exp Worksheet)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Other (list separately)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL (Links to Other on Program Exp Worksheet)**

|   | $ 179,500.00 | $ 183,540.00 | $ 187,150.80 | $ 190,833.11 | $ 194,589.61 |

*All capital expenditures-equipment, furniture, computers have been funded through the capital projects for the Feirstein Graduate School of Cinema at Steiner Studios and the Tow Performing Arts Center at Brooklyn College.*
APPENDIX J: SUPPORTING MATERIALS – REVENUE
## The Five-Year Revenue Projections for Program

### SENIOR COLLEGE (GRADUATE) WORKSHEET

**Year 1 = Fall 2016**

<table>
<thead>
<tr>
<th>EXISTING FULL-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of EXISTING FULL-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tuition Income (calculates 2% increase per year after Fall 2015)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total In-State Tuition &amp; Fees</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
</tr>
</tbody>
</table>

<p>| Tuition &amp; Fees:             |          |          |            |           |           |
| # of EXISTING FULL-TIME, Out-of-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;) | 0 | 0 | 0 | 0 | 0 |
| Annual Avg # of Credits per FT student (24-30) | 0 | 0 | 0 | 0 | 0 |
| Tuition Income (Specify Rate per credit. Calculates 2% annual increase after Fall 2015) | $0 | $0 | $0 | $0 | $0 |
| Total Tuition               | $0 | $0 | $0 | $0 | $0 |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) | 0 | 0 | 0 | 0 | 0 |
| Total Fees                  | 0 | 0 | 0 | 0 | 0 |
| <strong>Total Out-of-State Tuition &amp; Fees</strong> | <strong>$0</strong> | <strong>$0</strong> | <strong>$0</strong> | <strong>$0</strong> | <strong>$0</strong> |</p>
<table>
<thead>
<tr>
<th>EXISTING PART-TIME STUDENTS</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition &amp; Fees:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of EXISTING PART-TIME, In-State Students (linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015)</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Tuition</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total In-State Tuition &amp; Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

| Tuition & Fees:             |          |          |            |           |           |
| # of EXISTING PART-TIME Out of State Students (linked from "Enrollment and Seat Need Projections") | 0        | 0        | 0          | 0         | 0         |
| Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15) |          |          |            |           |           |
| Tuition Income (Specify Rate per credit. Calculates 2% increase per year after Fall 2015) | $0       | $0       | $0         | $0        | $0        |
| Total Tuition               | $0       | $0       | $0         | $0        | $0        |
| Student Fees (enter ANNUAL program fees other than standard CUNY fees) |          |          |            |           |           |
| Total Fees                  | 0        | 0        | 0          | 0         | 0         |
| Total Out-of-State Tuition & Fees | $0      | $0       | $0         | $0        | $0        |
### TOTAL EXISTING PART TIME REVENUE

<table>
<thead>
<tr>
<th></th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
</tr>
</thead>
</table>

### TOTAL EXISTING REVENUE (LINKS TO REVENUE SPREADSHEET ROW 5)

<table>
<thead>
<tr>
<th></th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
<th>$0</th>
</tr>
</thead>
</table>

## NEW FULL-TIME STUDENTS

<table>
<thead>
<tr>
<th>Tuition &amp; Fees:</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
</tr>
</thead>
<tbody>
<tr>
<td># of NEW FULL-TIME, In-State Students</td>
<td>2017</td>
<td>2018</td>
<td>2019</td>
<td>2020</td>
<td>2021</td>
</tr>
<tr>
<td>(linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
<td>8</td>
<td>17</td>
<td>17</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Tuition Income</td>
<td>$10,535</td>
<td>$10,957</td>
<td>$11,395</td>
<td>$11,851</td>
<td>$12,325</td>
</tr>
<tr>
<td>(Calculates 2% increase per year after Fall 2015)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Total Tuition</td>
<td>$84,280</td>
<td>$186,269</td>
<td>$193,715</td>
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<td>Student Fees</td>
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<td>$8,600</td>
<td>$8,940</td>
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<tr>
<td>(enter ANNUAL program fees other than standard CUNY fees)</td>
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<tr>
<td>Total Fees</td>
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<td>$146,200</td>
<td>$151,980</td>
<td>$143,040</td>
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<td><strong>Total In-State Tuition &amp; Fees</strong></td>
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### Tuition & Fees:

<p>| # of NEW FULL-TIME, Out-of-State Students  | 2 | 3 | 3 | 4 | 4 |
| (linked from &quot;Enroll &amp; Seat Need Projections&quot;) |  |  |  |  |  |
| Annual Avg # of Credits per FT student (24-30) |  |  |  |  |  |
| Tuition Income  | Specify Rate per credit. Calculates 2% increase per year after Fall 2015 | $18,720 | $19,469 | $20,248 | $21,057 | $21,900 |
| Total Tuition   | $37,440 | $58,407 | $60,744 | $84,228 | $87,600 |
| Student Fees    | enter ANNUAL program fees other than standard CUNY fees | $8,280 | $8,600 | $8,940 | $8,940 | $8,940 |
| Total Fees      | $16,560 | $25,800 | $26,820 | $35,760 | $35,760 |
| <strong>Total Out-of-State Tuition &amp; Fees</strong> | $54,000 | $84,207 | $87,564 | $119,988 | $123,360 |</p>
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<td>Tuition &amp; Fees:</td>
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<tr>
<td># of NEW PART-TIME, In-State Students</td>
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<td>(linked from &quot;Enroll &amp; Seat Need Projections&quot;)</td>
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<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
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<tr>
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<tr>
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<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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<td>Total Fees</td>
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<tr>
<td><strong>Total In-State Tuition &amp; Fees</strong></td>
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<td>$0</td>
<td>$0</td>
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<td>Tuition &amp; Fees:</td>
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<tr>
<td># of NEW PART-TIME, Out-of-State Students</td>
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<tr>
<td>Total Enrolled Credits (Enter Avg # credits per student per year-Fall+ Spring+Summer -- i.e. 6 Fall, 6 Spring, 3 Summer=15)</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>Total Tuition</td>
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<td>Student Fees (enter ANNUAL program fees other than standard CUNY fees)</td>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td><strong>Total Out-of-State Tuition &amp; Fees</strong></td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>TOTAL NEW PART-TIME REVENUE</td>
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<td>$ 0</td>
<td>$ 0</td>
<td>$ 0</td>
<td>$ 0</td>
</tr>
<tr>
<td>-----------------------------</td>
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<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>TOTAL NEW REVENUE (LINKS TO REVENUE SPREADSHEET ROW 7)</td>
<td>$ 204,520</td>
<td>$ 416,676</td>
<td>$ 433,259</td>
<td>$ 452,641</td>
<td>$ 463,600</td>
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<table>
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<tr>
<th>OTHER REVENUE</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
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<tr>
<td>Other Revenue From Existing Sources (specify and explain) - LINKS TO REVENUE SPREADSHEET ROW 13</td>
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<td>Other Revenue New (specify and explain) (LINKS TO REVENUE SPREADSHEET ROW 15)</td>
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</table>
APPENDIX K: SAMPLE JOB OPPORTUNITIES
Sample Job Description #1

Music Programmer/Sound Designer
Celldweller Productions - Detroit, MI

Detroit based producer/composer/artist Celldweller is seeking a full-time Music Programmer/Sound Designer to work in Celldweller Studios.

Job Description
The ideal candidate for this position should have the ability to program and sound design musical Beats/Loops, Score Rhythms, Drones, Synth and Bass Lines, be extremely organized, and should be capable of multitasking and handling deadlines. Candidate should be able to demonstrate dependability and a strong work ethic.

Job Duties
Programming Music and Sound Design for projects including: Film & Video Game Scores, Sound Libraries, Sample Packs and Commercially Released Albums.

Required Skills
• Thorough knowledge of Mac OS X
• Cubase (Pro Tools, Ableton, Renoise, Metasynth a Plus)
• Ability to program synths and FX to create original and interesting sounds for Film/Video Game Score application
• Ability and desire to record original audio (organic instruments and sound FX)
• Ability to edit and mangle sound (sometimes for produced audio, other times for abstract & abrasive purposes - very interested in hearing original and interesting production ideas)
• Ability to be musical, but does not need to be a composer/songwriter
• Ability to create & implement systems/processes to keep projects on schedule and organized
• Additional Consideration for:
  Ability to play various instruments
  Knowledge/experience with analog and modular synths
  Understanding and programming orchestral arrangements

Hours and Compensation:
Salary: Negotiable
Full-Time: 40 hours per week
Benefits: Holiday/Vacation/Sick Pay

Please visit us at http://celldweller.com/apply to apply for this job.
Required Experience:

• Mac OS X Cubase (Pro Tools, Ableton, Renoise, Metasynth a Plus): 5 years

[Source: http://www.indeed.com/cmp/Celldweller-Productions/jobs/Music-Programmer-Sound-Designer-7d0fb6788862415c?q=music+composer]

Sample Job Description #2

VP, A&R
Sony Music
Location: US-NY-New York
Posted Date
6/24/2015

Job Overview
Sony Music Entertainment is a global recorded music company with a roster of current artists that includes a broad array of both local artists and international superstars, as well as a vast catalog that comprises some of the most important recordings in history. Sony Music Entertainment is a wholly owned subsidiary of Sony Corporation of America.

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability or protected veteran status.

Responsibilities
The Vice President, A & R responsibilities may include, but will not be limited to:
• Evaluate new talent and serve as a liaison between assigned artists and the label
• Recommend new talent, concepts and projects to sign to label in adult-oriented, Crossover, Broadway, Soundtracks and Jazz genres
• Provide comprehensive feedback on new music to SVP/GM and Label Group President
• Attend live showcases/concerts
• Review and recommend submitted/solicited demos as well as online material via artist/band websites and social networking sites (i.e.: MySpace and Facebook)
• Act as label liaison with the artist once they are signed to the label
• Oversee the recording, production, mastering, and sequencing of artist projects
• Provide creative input and direct on artist’s material and recording career
• Find suitable producers, writers/co-writers, sound engineers and recording studios
• Coordinate pre-production and production, mixing, mastering
• Plan and monitor recording budgets for assigned projects
• Keep projects within agreed budget and schedule/timeline
• Evaluate recording and mixing progress for label’s artists
• Maintain files/records on all projects released, proposed or submissions denied
• Work closely with other label departments/employees including product development, marketing, publicity, promotion and sales to try to ensure recorded material is commercially successful
• Develop and maintain relationships within industry (managers, agents, attorneys, concert promoters, radio promo reps, retail contacts, trade and consumer press, tastemakers, etc.)
• Manage company’s A&R consultants and/or scouts in direction and budgets
• Cooperate with international repertoire center (Berlin) on priority projects
• Advise on US catalog exploitation
• Assist in developing broader portfolio of products and services for label (e.g. strategic partnership with Carnegie Hall, 360 deals and equity touring deals)
• Supervisory responsibility for Manager, A&R Administration

Qualifications
• Minimum of 5-7 years of experience in the music industry with demonstrated track record of discovering new artists that fit with the Masterworks genre and direction
• Must be able to create and maintain very strong relationships internally (Marketing, Product Development, Publicity, Promotion, Sales, Touring and Events, Legal and Finance) as well as well as externally (producers, booking agents, tour managers press, industry contacts)
• Experience required in the different steps in the recording, production, mastering, sequencing and release of a record
• Strong computer skills including MS Office (Word, Excel & Outlook) and an intimate knowledge of the internet
• Exceptional communication and time management skills
• Must be able to work independently as well as be a team player and flexible
• A proactive, self-starter who has strong problem solving, social and interpersonal skills
• The ability to prioritize and multi-task
• Must be available to travel and attend evening showcases as required
• Must understand the artist lifestyle

[Source: https://jobs-sonymusic.icims.com/jobs/4787/vp%2c-a%26r/job]

Sample Job Description #3

Editor
NBC Universo
Hispanic Enterprises & Content
Location: Hialeah, Florida
Job Summary/Purpose
The programming/production Senior Editor is responsible for post-production of music and lifestyle programming content as well as facilitating and managing promotional material for related content.

Essential Responsibilities
• Transcoding of digital media
• Assembly of footage for edits, when needed
• Involved and takes part in daily edit schedule
• Edits projects per the edit schedule
• Involves themselves in logistics of post-production at NBC UNIVERSO

Qualifications/Requirements
• Bachelor’s degree in Communications, Mass Communications, Television Production or similar field
• Embraces new technologies and concepts in workflow
• Knowledge of Avid Media Composer, Interplay & Final cut pro systems a must
• Must work flexible work schedule
• Well-developed time, resource, and project management skills

Eligibility Requirements
• Interested candidates must submit a resume/CV through nbunicareers.com to be considered
• Must be willing to work in Hialeah, FL
• Must be willing to work evenings and weekends
• Must be willing to submit to a background investigation
• Must have unrestricted work authorization to work in the United States
• Must be 18 years or older
• Must be covered by Solutions, NBCU’s Alternative Dispute Resolution Program

Desired Characteristics
• Spanish language proficiency
• Flexibility, adaptability, responsiveness, attention to detail, resourcefulness
• A commitment to excellence, professionalism and timely communication

[Source: https://www.velvetjobs.com/id/featuredjob/media/guest/240502]

Sample Job Description #4

Audio SQA Engineer
Avid Audio
Mountain View, California
Job Description
About the Team
Interested in music and audio? We are looking for a talented software quality test engineer to join Avid’s Audio Team. You will be testing software for exciting new Pro Tools® releases, control surfaces, and mixing consoles that will be used by major film studios, television broadcasters, and music clients. You will be part of a team of motivated software testers, engineers, and product managers in a supportive and highly collaborative environment.

About the Job
• Pro Tools® experience
• Experience with mixing consoles and control surfaces
• Experience with other Digital Audio Workstation software

About You:
• Excellent software and hardware troubleshooting skills
• Good communication skills
• 4+ years of SQA experience
• Understanding of audio and video signal standards and signal flow in a studio environment
• Ability to work with cross-functional teams spanning different geographies
• Agile/Scrum development process experience is helpful
• Interest in or experience with music and audio production

About Avid
Through Avid Everywhere, Avid delivers the industry's most open, innovative and comprehensive media platform connecting content creation with collaboration, asset protection, distribution and consumption for the most listened to, most watched and most loved media in the world—from the most prestigious and award-winning feature films, music recordings, and television shows, to live concerts and news broadcasts. Industry leading solutions include Pro Tools®, Media Composer®, ISIS®, Interplay®, and Sibelius®. Our digital audio and video solutions continue to revolutionize the art of creative storytelling, and have earned us hundreds of awards, including two Oscar® statuettes, a Grammy®, and 14 Emmys®.

[Source: https://sjobs.brassring.com/TGWebHost/jobdetails.aspx?SID=^HVJtAJ_slp_rhc_XfzEx55Ziu9X0Q5I3xilLGurff9EThBuL4ZtLFV9v8GaU0CsORHMb&jobId=1101530&type=search&JobReqLang=1&recordstart=1&JobSiteId=5286&JobSiteInfo=1101530_5286&GQId=0]

Sample Job Description #5
Senior Producer, Video
Video and Audio Design Job
The Walt Disney Company
Location: Shanghai, China
Job Description
Create, develop and produce in-service (on-air) content programming, marketing and synergy promos. Assist the content planning head for the in-service (on-air) promo creative strategy formulation and ensure its realization through quality delivery of all promos required. Also work closely with affiliate sales and DCS / corporate marketing teams to support off-service (off-air) sales, marketing and synergy from a video creative production perspective for e.g. DCS product sizzles, presentation reels, event videos etc.

Responsibilities
In-service (on-air) content programming, marketing and synergy promos
• Creative development and production of quality and effective content related promos including programming, marketing and synergy spots to interest viewers and encourage content usage
• Delivery of most innovative creative using varieties of production techniques, whether specially shot, animated or clip based, with strong visual imagery, design, audio design, music, sync and voice over to best communicate key messaging to viewers
• Work within the budget issued, including resource management both in-house and outsource as appropriate and needed
• Approve all promo spots from creative standpoint and ensure delivery meeting deadlines and in technical compliance

In-service (on-air) promo creative strategy
• Work proactively with the content planning head on in-service (on-air) promo creative strategy development
• Ensure all promo spots are aligned with the promo creative strategy

Creative production support to off-service (off-air) videos
• Devise creative solutions and provide production support to DCS off-service (off-air) video needs including but not limited to product/service sizzles, presentation reels and event videos
• Work closely with affiliate sales and DCS / corporate marketing teams

Qualifications and People Management experience
• A proven track record of creative excellence within the on-air TV promotion industry
• Excellent creative skills and creative judgment with a keen interest in art & media
• Demonstrate client/audience focus
• Clear knowledge of the appropriate production processes, relevant tools and techniques
• Ability to self op at offline level (Final Cut Pro preferred); experience in graphics design will be a plus
• Great visual, copy and music sense vital.
• Have an understanding of budgetary constraints within a creative team
• People management experience is necessary, including the ability to assess, motivate and coach creative and production team members as well as 3rd party contributors

Skills & Competencies Required
• Imagination / creative thinking: Able to transform creative ideas and impulses into practical reality; can look at existing situations and problems in novel ways and come up with creative solutions
• A professional and creative team leader and team player
• Ability to prioritize tasks and work / perform well under pressure
• Proactive and Self-motivated
• Good written and verbal communication skills to pitch ideas and brief projects clearly
• Interpersonal and communication skills sufficient to establish and maintain effective working relations with a wide range of internal and external contacts

Required Education
• Bachelor degree or above

APPENDIX L: EVALUATION REPORT FORMS
I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

Sonic Arts is an important and growing field. This proposal is thorough, and clearly lays out both the motivation for the program, its purpose, and the path to a sustainable program.

2. Comment on the special focus of this program, if any, as it relates to the discipline.

The focus on digital media in the sonic domain is the focus of this program. Given the fundamental transformations in the field, this is precisely the focus that will draw students to the program, its purpose, and the path to a sustainable program.

3. Comment on the plans and expectations for continuing program development and self-assessment.

The plans for continued program development are fine. The program could begin with the current excellent faculty, and build on this as the program matures.

4. Assess available support from related programs.

Miguel Macias, Assistant Professor in the dept. of Television and Radio, will be an important asset for this program. He has excellent experience in radio production, and sound design.

5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?

The authors have taken care to assess the kinds of fields that their graduates could reasonably enter, and the list is long. The need and demand for this type of program is growing, and there are
a number of new entries to the field. However, this proposal is both cost effective and the faculty are unusually impressive.

II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

This is where the proposal truly shines. George Brunner, Douglas Cohen, Doug Geers and David Grubbs stand out especially for their work in digital media, while Jason Eckhardt, Tania Leon and Rudolph Kompank, all have contributed importantly in the domain of acoustic music. This blend will be particularly appealing to, and important for, potential students. The only question I have is what specific courses in the program could be taught by Profs. Eckhardt and Leon. Of course, they might work with composition students in this area, as many issues cross between the digital and acoustic domains.

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

I agree with the assessment that expanding by one faculty member will be very useful. However, with the program could certainly be started with the current grouping.

8. Evaluate credentials and involvement of adjunct and support faculty.

Rudolph Kompanek, adjunct faculty in Music Composition, has terrific experience in film scoring. This will be an important area in a sound art program. In fact, he has more experience in this domain than the regular faculty.

III. Resources

9. Comment on the adequacy of physical resources and facilities, e.g., library, computer, and laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.

The physical resources and facilities seem to be in place

10. (Only for programs requiring master plan amendment.) What is the institution's commitment to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

IV. Summary Comments and Additional Observations

11. Summarize the major strengths and weaknesses of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.
This program proposal is thorough and well designed. The curriculum is very well laid out, and will prepare students for a wide variety of occupations in the field. A lot of thought has gone into its design, and it takes advantage of current technologies in an imaginative way. The only potential weakness is the two members of the faculty that are not listed as instructors, reflecting the potential need for one additional faculty member. However, the potential for this program to thrive at Brooklyn College is very high, and I strongly recommend it.
CURRICULUM VITAE
JUDITH SHATIN

McIntire Department of Music
P O Box 400176
University of Virginia
Charlottesville, VA 22904-4176

Office: (804) 924-3052
E-mail: shatin@virginia.edu
http://www.judithshatin.com

Education

<table>
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<th>Year</th>
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</tr>
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<td>A.B. (Phi Beta Kappa, Graduation with Honors)</td>
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<tr>
<td>1974</td>
<td>The Juilliard School</td>
<td>M.M. (Abraham Ellstein Award)</td>
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<td>M.F.A.</td>
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<td>1979</td>
<td>Princeton University</td>
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Academic Career

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<tr>
<td>1985-</td>
<td>University of Virginia</td>
<td>Associate Professor</td>
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<tr>
<td>1985-2002</td>
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<td>Founder and Director</td>
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<tr>
<td>1995-2002</td>
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<td>William R. Kenan, Jr. Professor</td>
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Selected Awards and Commissions

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<td>2011</td>
<td>Scottish Voices</td>
<td>Commission</td>
<td>New work for female vocal quartet + harp</td>
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<td>2010</td>
<td>Peninsula Women’s Chorus</td>
<td>Commission</td>
<td>The Jumbles (SSA)</td>
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<tr>
<td>2009</td>
<td>Fromm Foundation, Harvard University</td>
<td>Commission</td>
<td>New Work for amp. string quartet + electronics</td>
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<tr>
<td>2009-2010</td>
<td>Charlottesville &amp;University Symphony Orchestra, Illinois, Richmond &amp; Virginia Symphonies</td>
<td>Co-Commission</td>
<td>Jefferson, In His Own Words</td>
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<tr>
<td>2009</td>
<td>Ms. Ellen Waldo</td>
<td>Commission</td>
<td>To Keep the Dark Away, for Solo Piano</td>
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<td>2008</td>
<td>Minnesota Center Chorale</td>
<td>Commission</td>
<td>Orchestration version of Songs of War and Peace</td>
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<tr>
<td>2007</td>
<td>Library of Congress</td>
<td>McKim Fund Commission</td>
<td>Tower of the Eight Winds for vln/pno</td>
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<tr>
<td>2007-08</td>
<td>Virginia Commission for the Arts</td>
<td>Composer Fellowship – Premiere, 6/2/09</td>
<td>Spring Tides, Chamber plus electronics</td>
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<td>2007</td>
<td>Young People’s Chorus of NYC</td>
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</tr>
<tr>
<td>2006</td>
<td>I-jen Fang and Mike Schutz</td>
<td>Commission</td>
<td>Time to Burn</td>
</tr>
<tr>
<td>2006</td>
<td>Virginia Glee Club</td>
<td>Commission</td>
<td>The Jabberwocky</td>
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<tr>
<td>2006</td>
<td>The Pittsburgh Jewish Music Festival</td>
<td>Commission</td>
<td>Teruah</td>
</tr>
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<td>2006</td>
<td>Palmares du 33e Concours Internationaux de Bourges</td>
<td>Mention</td>
<td>For the Birds</td>
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<tr>
<td>2006</td>
<td>Z-Society, UVA</td>
<td>Outstanding Teacher of the Year Award</td>
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<tr>
<td>2005</td>
<td>Cellist Madeleine Shapiro</td>
<td>Commission</td>
<td>For the Birds</td>
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<td>2004-05</td>
<td>Jane Franklin Dance</td>
<td>Commission</td>
<td>Civil War Memories</td>
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<td>2003-04</td>
<td>newEar Ensemble</td>
<td>Commission</td>
<td>Clave</td>
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<td>2003</td>
<td>New York Treble Singers</td>
<td>Commission</td>
<td>Amulet</td>
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<td></td>
<td>VA Commission for the Arts</td>
<td>Fellowship—residency, VA Center for Creative Arts</td>
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<td>2002-03</td>
<td>UVa Art Museum/VA Commission for the Arts</td>
<td>Tree Music</td>
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<tr>
<td>2001</td>
<td>Wintergreen Performing Arts/Americans for the Arts</td>
<td>Commission</td>
<td>Singing the Blue Ridge</td>
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<td>2000</td>
<td>Currents</td>
<td>Commission</td>
<td>Run</td>
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<tr>
<td>1999-00</td>
<td>Core Ensemble</td>
<td>Commission</td>
<td>Houdini, Master Conjurer</td>
</tr>
<tr>
<td></td>
<td>Hexagon Ensemble (Holland)</td>
<td>Commission</td>
<td>Ockeghem Variations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sabbatical</td>
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<tr>
<td>1998-99</td>
<td>Sesquicentennial Fellowship, UVa</td>
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<td>1996</td>
<td>American Composers Forum</td>
<td>Performance Incentive Award Core Ensemble</td>
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<td>1995</td>
<td>Kronos Quartet</td>
<td>Commission</td>
<td>Elijah’s Chariot</td>
</tr>
<tr>
<td>1995</td>
<td>National Symphony</td>
<td>Hechinger Commission, 25th Anniversary of the Kennedy Center</td>
<td>Hearing the Call (2 trumpets, 2 snare drums)</td>
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<tr>
<td>1994-95</td>
<td>University of Virginia</td>
<td>Associate Fellowship</td>
<td>Institute for Advanced Technologies in the Humanities</td>
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<tr>
<td>1994</td>
<td>James Kraft/Manhattan School of Music</td>
<td>Commission</td>
<td>The Janus Quartet (String Quartet)</td>
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<td></td>
<td>Pulitzer Prize Nomination</td>
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<tr>
<td>1992-94</td>
<td>Lila Acheson Wallace/Readers Digest Foundation, ($115,000 award)</td>
<td>Grant to Shepherd College for two-year retrospective of Shatin’s music and commissioned piece</td>
<td>4 week-long residencies, plus commissioned piece COAL</td>
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<tr>
<td>1992</td>
<td>University of Virginia</td>
<td>Commission, celebrating Jefferson's 250th birthday</td>
<td>We Hold These Truths</td>
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<tr>
<td></td>
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<td></td>
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<tr>
<td>1992</td>
<td>University of Virginia</td>
<td>Senior Fellow, Commonwealth Center for Literary and Cultural Change</td>
<td>Seminar, Computing and New Cultural Forms</td>
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<tr>
<td>1992-94</td>
<td>National Endowment for the Composer Fellowship</td>
<td>Elijah’s Chariot for the</td>
<td></td>
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<tr>
<td>Year</td>
<td>Institution</td>
<td>Grant/Competition</td>
<td>Work</td>
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<td>--------</td>
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<tr>
<td>1991</td>
<td>Lila Acheson Wallace/Reader’s Digest Foundation</td>
<td>Planning Grant to Shepherd College</td>
<td>Kronos Quartet; Four Songs for Girls Chorus</td>
</tr>
<tr>
<td></td>
<td>National Flute Association</td>
<td>Winner, Newly-Published Music Competition</td>
<td>Retrospective &amp; commission of Shatin’s music</td>
</tr>
<tr>
<td>1990-91</td>
<td>Virginia Chamber Orch.</td>
<td>Commission</td>
<td>Stringing the Bow</td>
</tr>
<tr>
<td></td>
<td>Virginia Commission for the Arts</td>
<td>Individual Composer Award</td>
<td>Karios</td>
</tr>
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<td></td>
<td>Virginia Commission for the Arts</td>
<td>Commission to Roxbury Chamber Players</td>
<td>Secret Ground</td>
</tr>
<tr>
<td>1990</td>
<td>National Endowment for the Arts &amp; Bay Area Women’s Philharmonic</td>
<td>Composer Fellowship</td>
<td>Piping the Earth</td>
</tr>
<tr>
<td></td>
<td>Douglass College</td>
<td>Inducted into Douglas College Society (Highest Alumnae Award)</td>
<td></td>
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<tr>
<td>1990</td>
<td>Roxbury Chamber Players</td>
<td>Commission</td>
<td>Secret Ground</td>
</tr>
<tr>
<td></td>
<td>Sesquicentennial Associate, UVa</td>
<td>Sabbatical Award</td>
<td>Guest Composer at Stanford University</td>
</tr>
<tr>
<td>1989</td>
<td>Barlow Foundation</td>
<td>Commission</td>
<td>Three Summers Heat</td>
</tr>
<tr>
<td></td>
<td>Bay Area Women’s Philharmonic &amp; NEA</td>
<td>Commission</td>
<td>Piping the Earth</td>
</tr>
<tr>
<td>1988</td>
<td>American Academy and Institute of Arts &amp; Letters</td>
<td>Nominated for Award</td>
<td></td>
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<tr>
<td>1986</td>
<td>American Academy and Institute of Arts &amp; Letters</td>
<td>Nominated for Award</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Garth Newel Chamber Players</td>
<td>Commission</td>
<td>View from Mt. Nebo</td>
</tr>
<tr>
<td></td>
<td>American Academy and Institute of Arts &amp; Letters</td>
<td>Nominated for Award</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>National Endowment for the Arts</td>
<td>Composer Fellowship</td>
<td>Ruah</td>
</tr>
<tr>
<td></td>
<td>University of Virginia</td>
<td>Commission</td>
<td>Commonwealth Salute</td>
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<tr>
<td>1982</td>
<td>Ash Lawn Opera Festival</td>
<td>Commission</td>
<td>Follies and Fancies</td>
</tr>
<tr>
<td>1981</td>
<td>Ash Lawn Opera Festival</td>
<td>Commission for orchestration</td>
<td>Follies and Fancies</td>
</tr>
<tr>
<td>1980</td>
<td>American String Quartet Festival, Charles Ives Center</td>
<td>Performance</td>
<td>Constellations</td>
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<tr>
<td></td>
<td>National Endowment for the Arts</td>
<td>Composer Fellowship</td>
<td>Aura</td>
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<tr>
<td>1978-79</td>
<td>Memorial Foundation for Jewish Culture</td>
<td>Commission</td>
<td>Job</td>
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<tr>
<td>1978</td>
<td>East and West Artists Composition Competition</td>
<td>Competition Winner, Performance at Weill Recital Hall, Carnegie Hall</td>
<td>Quatrain</td>
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</table>
### Meet the Composer Grants

<table>
<thead>
<tr>
<th>Year</th>
<th>Composition</th>
<th>Year</th>
<th>Composition</th>
<th>Year</th>
<th>Composition</th>
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<tbody>
<tr>
<td>2008</td>
<td>Run</td>
<td>2008</td>
<td>Songs of War and Peace</td>
<td>2005</td>
<td>Shapirit Y’fehfiah</td>
</tr>
<tr>
<td>2001</td>
<td>Songs of War and Peace</td>
<td>1997</td>
<td>Sea of Reeds</td>
<td>1997</td>
<td>Residency, University of Akron, multiple performances</td>
</tr>
<tr>
<td>1996</td>
<td>The Janus Quartet</td>
<td>1994</td>
<td>Four Songs for Girls Chorus and Tape</td>
<td>1994</td>
<td>Ruah, Flute/Piano version</td>
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<tr>
<td>1994</td>
<td>Beetles, Monsters and Roses</td>
<td>1993</td>
<td>Concert of Shatin’s Music, Sweetbriar College</td>
<td>1992</td>
<td>Song of Ruth, Psalm 110</td>
</tr>
<tr>
<td>1991</td>
<td>Kairos</td>
<td>1990</td>
<td>Piping the Earth</td>
<td>1990</td>
<td>Hearing Things</td>
</tr>
<tr>
<td>1987</td>
<td>Marvelous Pursuits</td>
<td>1987</td>
<td>Ruah</td>
<td>1985</td>
<td>Concert of Shatin’s music, Strathmore Hall</td>
</tr>
<tr>
<td>1984</td>
<td>Werther</td>
<td>1985</td>
<td>Wind Songs</td>
<td>1982</td>
<td>Wind Songs</td>
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<tr>
<td>1980</td>
<td>Nightshades</td>
<td>1979</td>
<td>Love Song and Night Blooms</td>
<td>1979</td>
<td>Lost Angels</td>
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<tr>
<td>1978</td>
<td>Arche</td>
<td>1975</td>
<td>Quatrain</td>
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### Selected Residencies

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<tr>
<th>Year</th>
<th>Institution</th>
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<tr>
<td>2010</td>
<td>Wintergreen Performing Arts</td>
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<tr>
<td>2008</td>
<td>BMI Residency, Vanderbilt University</td>
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<tr>
<td>2007</td>
<td>Sonic Explorations, College Conservatory of Music, Cincinnati</td>
</tr>
<tr>
<td>2006</td>
<td>Seal Bay Festival</td>
</tr>
<tr>
<td>2004</td>
<td>Bellagio, Rockefeller Study and Conference Center</td>
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<tr>
<td>2004</td>
<td>Austin Peay State University, featured guest composer, New Directions Series</td>
</tr>
<tr>
<td>2003</td>
<td>Virginia Center for Creative Arts</td>
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<tr>
<td>2003</td>
<td>Wellesley Composers Conference, resident guest composer</td>
</tr>
<tr>
<td>2001</td>
<td>MacDowell Artist Colony</td>
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<tr>
<td>2001</td>
<td>Storm King Festival Residency (Storm King, NY)</td>
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<tr>
<td>1999</td>
<td>Mishkan Amanim (Artist Colony in Herzliya, Israel), month-long residency</td>
</tr>
<tr>
<td>1999</td>
<td>David Lipscomb University, Middle Tennessee Composers Forum, featured guest composer</td>
</tr>
<tr>
<td>1999</td>
<td>Duke University, colloquium/performances</td>
</tr>
<tr>
<td>1997</td>
<td>Chamber Music and Composers’ Conference of the East; Bennington, VT</td>
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<tr>
<td>Year</td>
<td>Location/Event</td>
</tr>
<tr>
<td>------</td>
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<tr>
<td>1995</td>
<td>Brahmsiana, Baden-Baden, month-long residency</td>
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<tr>
<td>1994</td>
<td>University of Illinois — featured guest composer, lectures and performances</td>
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<tr>
<td>1992-94</td>
<td>Shepherd College: four week-long residencies devoted to Shatin’s music; multiple performances, outreach activities; see accompanying booklet, “COAL”</td>
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<tr>
<td>1990</td>
<td>Grand Teton Music Festival, featured composer, Music in the Present Tense Series</td>
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<tr>
<td>1989-90</td>
<td>Center for Computer Research in Music &amp; Acoustics, Stanford University, Guest Composer</td>
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<tr>
<td>1987</td>
<td>Yaddo Artist Colony</td>
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<tr>
<td>1986</td>
<td>Virginia Center for the Creative Arts, Garth Newel Chamber Players, Minnesota Orchestra, American Symphony Orchestra League Program</td>
</tr>
<tr>
<td>1985</td>
<td>Roxbury Chamber Players, Virginia Center for the Creative Arts</td>
</tr>
<tr>
<td>1984</td>
<td>Virginia Center for the Creative Arts</td>
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<tr>
<td>1983</td>
<td>La Cité Internationale des Arts, Paris, France</td>
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**Selected Colloquia, Invited Talks and Media**

<table>
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<th>Location/Event</th>
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<tr>
<td>2009</td>
<td>Yale University</td>
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<tr>
<td>2009</td>
<td>Library of Congress, Music and the Brain Series</td>
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<tr>
<td>2008</td>
<td>BMI Residency, Vanderbilt University</td>
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<tr>
<td>2007</td>
<td>Stanford University, Cincinnati College Conservatory, Columbia University</td>
</tr>
<tr>
<td>2004</td>
<td>University of Minnesota, School of Music (master class, colloquium, performance), ICMC 2004, Florida International University (colloquium), Keio University, Japan (colloquium), Tamagawa University, Japan (colloquium), NIME Conference (New Interfaces for Musical Expression), Hamamatsu, Japan</td>
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<tr>
<td>2002</td>
<td>Wintergreen Performing Arts, Preserving the Rural Soundscapes Project; lectures to Nelson County civic groups; soundscape walks for Wintergreen Performing Arts; Improv classes for Wintergreen Performing Arts and area schools, Tokyo Technology University (colloquium), University of Hawaii (colloquium), Peabody Conservatory (colloquium), SEAMUS, paper on Representation and Ambiguity in Electroacoustic Music, University of Glasgow (colloquium), Verona Conservatory Computer Music Festival</td>
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<tr>
<td>2000</td>
<td>Rutgers University (colloquium, performance of chamber works)</td>
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<tr>
<td>1999</td>
<td>Middle Tennessee Composers Forum, Co-sponsored by David Lipscomb University, Belmont College, Middle Tennessee State and Vanderbilt</td>
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Shatin
Selected Service to Profession

<table>
<thead>
<tr>
<th>Year</th>
<th>Service</th>
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<tbody>
<tr>
<td>2010</td>
<td>International Juror, 11th Composition Competition of the Fribourg International Festival of Sacred Music; Fribourg, Switzerland</td>
</tr>
<tr>
<td>2007</td>
<td>Rome Prize Juror</td>
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<tr>
<td>2005</td>
<td>External Review Panel, Cincinnati College Conservatory</td>
</tr>
<tr>
<td>2005</td>
<td>Judge, Pennsylvania Arts Council, MidAtlantic Arts Foundation</td>
</tr>
<tr>
<td>2005</td>
<td>External Review Panel, Duke University</td>
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<tr>
<td>1992-2008</td>
<td>External Reviewer for multiple tenure cases</td>
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<tr>
<td>2005</td>
<td>Judge, Student Commission Competition, SEAMUS</td>
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<tr>
<td>2003</td>
<td>External PhD Review, University of Melbourne</td>
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<tr>
<td>2002-</td>
<td>CMS, Advisory Board in Composition</td>
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<tr>
<td>2002</td>
<td>Judge, Illinois State Arts Council Composition Fellowships, Prix d’été competition, Peabody Conservatory,</td>
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<tr>
<td>2001</td>
<td>Judge, Virginia Music Teachers Association Commission</td>
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<tr>
<td>2000</td>
<td>Judge, Southeastern Composers Competition, Old Dominion University</td>
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<tr>
<td>1999-</td>
<td>Advisory Board, International Alliance for Women in Music</td>
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<tr>
<td>1998</td>
<td>Chair, Nominating Committee, International Alliance for Women in Music</td>
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<tr>
<td>1996-98</td>
<td>Chair, Nominating Committee, International Alliance for Women in Music</td>
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<tr>
<td>1995-1998</td>
<td>Jury member, Civitella Ranieri Artist Colony</td>
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<tr>
<td>1998</td>
<td>Judge, American Composers Form, McKnight Review Panel</td>
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<tr>
<td>1995</td>
<td>Secretary, International Alliance for Women in Music</td>
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<tr>
<td>1994-98</td>
<td>Board of Directors, American Composers Alliance</td>
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<tr>
<td>1994</td>
<td>NEA on-site visitor, Virginia Opera Company</td>
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<tr>
<td>1991</td>
<td>Score Review Panel, Women’s Philharmonic Orchestral Readings</td>
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<tr>
<td>1990</td>
<td>NEA Peer Review Panel, Composer Fellowship Program</td>
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<tr>
<td>1989-93</td>
<td>President, American Women Composers, Inc.</td>
</tr>
<tr>
<td>1988</td>
<td>Chair, Virginia Chapter, American Women Composers, Inc.</td>
</tr>
<tr>
<td>'92-'96; '82-'86,</td>
<td>Board of the Tuesday Evening Concert Series, University of Virginia</td>
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<tr>
<td>1982-85</td>
<td>Board of Directors, Virginia Women’s Cultural History Project</td>
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<tr>
<td>1981-85</td>
<td>Secretary, Executive Board, American Women Composers, Inc.</td>
</tr>
<tr>
<td>1974-79</td>
<td>Board of Directors, League of Composers/International Society for Contemporary Music; NY, NY (two terms)</td>
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Recordings

<table>
<thead>
<tr>
<th>Year</th>
<th>Work</th>
<th>Label</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td>2010</td>
<td><em>Ockeghem Variations</em></td>
<td>Eteetera</td>
<td>Dutch Hexagon Ensemble</td>
</tr>
<tr>
<td>2010</td>
<td><em>Tower of the Eight Winds</em></td>
<td>Innova</td>
<td>770 Borup-Ernst Duo recording of Shatin’s violin/piano music</td>
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<td>Label</td>
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<td>2010</td>
<td><em>Cherry Blossom and a Wrapped Things; After Hokusai</em></td>
<td>Aucourant</td>
<td>1001</td>
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<tr>
<td>2009</td>
<td>Penelope’s Song</td>
<td>Innova</td>
<td>736</td>
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<tr>
<td>2008</td>
<td><em>Spin</em></td>
<td>North/South</td>
<td>North/South</td>
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<tr>
<td>2004</td>
<td><em>Dreamtigers</em></td>
<td>Innova</td>
<td>613</td>
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<tr>
<td>2003</td>
<td><em>Piping the Earth</em></td>
<td>Capstone</td>
<td>CPS-8727</td>
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<tr>
<td>1999</td>
<td><em>Sea of Reeds, Three Summers Heat</em></td>
<td>Centaur, CDCM</td>
<td>CRC 2454</td>
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<tr>
<td>1999</td>
<td><em>Hearing the Call, Fantasia sobre el Flamenco</em></td>
<td>Sonora</td>
<td>CD (022591)</td>
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<tr>
<td>1999</td>
<td><em>1492</em></td>
<td>New World</td>
<td>80559-2</td>
</tr>
<tr>
<td>1997</td>
<td><em>Kairos, Fasting Heart, Gabriel’s Wing</em></td>
<td>Neuma</td>
<td>450-95</td>
</tr>
<tr>
<td>1997</td>
<td><em>Adonai Ro’i</em></td>
<td>New World</td>
<td>80504-2</td>
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**Selected Compositions by Judith Shatin**

**Solo**

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Instrument/Genres</th>
<th>Duration</th>
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<tr>
<td>2010</td>
<td><em>To Keep the Dark Away</em></td>
<td>Piano</td>
<td>10’</td>
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<tr>
<td>2006</td>
<td><em>Penelope’s Dream</em></td>
<td>Cello</td>
<td>9’</td>
</tr>
<tr>
<td>1996</td>
<td><em>St. Cecilia Fantasy</em></td>
<td>Piano</td>
<td>21’</td>
</tr>
<tr>
<td>1995</td>
<td><em>Coursing Through the Still Green</em></td>
<td>Flute</td>
<td>5’</td>
</tr>
<tr>
<td>1995</td>
<td><em>Baruch HaBa</em></td>
<td>Voice (versions for male or female)</td>
<td>2.5’</td>
</tr>
<tr>
<td>1995</td>
<td><em>Chai Variations on Eliahu HaNavi</em></td>
<td>Solo Piano</td>
<td>21’</td>
</tr>
<tr>
<td>1989</td>
<td><em>Round 3</em></td>
<td>Solo Trombone</td>
<td>Var.</td>
</tr>
<tr>
<td>1988</td>
<td><em>Meridians</em></td>
<td>Clarinet</td>
<td>11’</td>
</tr>
<tr>
<td>1987</td>
<td><em>Carreño</em></td>
<td>Pianist/Mezzo</td>
<td>18’</td>
</tr>
<tr>
<td>1987</td>
<td><em>Fasting Heart</em></td>
<td>Flute</td>
<td>10’</td>
</tr>
<tr>
<td>1985</td>
<td><em>Assembly Line #1</em></td>
<td>Oboe</td>
<td>Var.</td>
</tr>
<tr>
<td>1985</td>
<td><em>Scirocco</em></td>
<td>Piano</td>
<td>4’</td>
</tr>
<tr>
<td>1983</td>
<td><em>Sursum Corda</em></td>
<td>Cello</td>
<td>9.5’</td>
</tr>
<tr>
<td>1983</td>
<td><em>L’étude du Cœur</em></td>
<td>Viola</td>
<td>8’</td>
</tr>
<tr>
<td>1987</td>
<td><em>Widdershins</em></td>
<td>Piano</td>
<td>8.50’</td>
</tr>
<tr>
<td>1978</td>
<td><em>Postlude</em></td>
<td>Organ</td>
<td>4’</td>
</tr>
<tr>
<td>1977</td>
<td><em>Ruth</em></td>
<td>Voice</td>
<td>3’</td>
</tr>
</tbody>
</table>
**Chamber Music**

<table>
<thead>
<tr>
<th>Year</th>
<th>Work Title</th>
<th>Ensembles/Instruments</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td><em>Tower of the Eight Winds</em></td>
<td>Violin/Piano</td>
<td>12'</td>
</tr>
<tr>
<td>2008</td>
<td><em>Chai Variations</em></td>
<td>String Quartet</td>
<td>18'</td>
</tr>
<tr>
<td>2006</td>
<td><em>Time to Burn</em></td>
<td>Oboe and 2 percussion</td>
<td>9'</td>
</tr>
<tr>
<td>2006</td>
<td><em>Teruah</em></td>
<td>Shofar, 2 trpts, 2 trmbn, 3 hrn, timpani</td>
<td>8:45'</td>
</tr>
<tr>
<td>2005</td>
<td><em>Clave</em> (rev. 2008)</td>
<td>Fl, cl, sax, vln, vla, vc, perc., pno</td>
<td>11:00'</td>
</tr>
<tr>
<td>2005</td>
<td><em>Three Summers Heat</em></td>
<td>Version for Soprano, flute, vla, hrp</td>
<td>18:00'</td>
</tr>
<tr>
<td>2004</td>
<td><em>Ki Koleich Arev</em></td>
<td>Soprano, flute, piano</td>
<td>4'</td>
</tr>
<tr>
<td>2003</td>
<td><em>Fledermaus Fantasy</em></td>
<td>Version for solo violin + vla, vc, cb, pno</td>
<td>17'</td>
</tr>
<tr>
<td>2001</td>
<td><em>Run</em></td>
<td>Piano quartet</td>
<td>8:20'</td>
</tr>
<tr>
<td>2000</td>
<td><em>Fledermaus Fantasy</em></td>
<td>Violin and Piano</td>
<td>17'</td>
</tr>
<tr>
<td>2000</td>
<td><em>Ockeghem Variations</em></td>
<td>Wind Quintet and piano</td>
<td>18</td>
</tr>
<tr>
<td>2000</td>
<td><em>Calling</em></td>
<td>Cello, piano, percussion</td>
<td>2'</td>
</tr>
<tr>
<td>1999</td>
<td><em>Houdini, Memories of a Conjurer</em></td>
<td>Cello, piano, percussion</td>
<td>70'</td>
</tr>
<tr>
<td>1998</td>
<td><em>Fantasia Sobre El Flamenco</em></td>
<td>Brass Quintet</td>
<td>9'</td>
</tr>
<tr>
<td>1997</td>
<td><em>Spin</em></td>
<td>Fl, Cl, Bsn, Vln, Vla, Vlc</td>
<td>7'</td>
</tr>
<tr>
<td>1996</td>
<td><em>Dreamtigers</em></td>
<td>Flute and Guitar</td>
<td>14'</td>
</tr>
<tr>
<td>1995</td>
<td><em>Hearing the Call</em></td>
<td>2 Trumpets and 2 Snare Drums</td>
<td>2'</td>
</tr>
<tr>
<td>1994</td>
<td><em>Ruah</em></td>
<td>Flute/piano version</td>
<td>23'</td>
</tr>
<tr>
<td>1994</td>
<td><em>The Janus Quartet</em></td>
<td>String Quartet</td>
<td>12'</td>
</tr>
<tr>
<td>1992</td>
<td><em>1492</em></td>
<td>Piano and Percussion</td>
<td>11'</td>
</tr>
<tr>
<td>1990</td>
<td><em>Secret Ground</em></td>
<td>Flute, Clarinet, Violin &amp; Cello</td>
<td>13'</td>
</tr>
<tr>
<td>1989</td>
<td><em>Gabriel’s Wing</em></td>
<td>Flute &amp; Piano</td>
<td>9'</td>
</tr>
<tr>
<td>1989</td>
<td><em>Doxa</em></td>
<td>Viola and Piano</td>
<td>6'</td>
</tr>
<tr>
<td>1987</td>
<td><em>Marvelous Pursuits</em></td>
<td>Vocal Quartet &amp; Piano 4-hands</td>
<td>21'</td>
</tr>
<tr>
<td>1986</td>
<td><em>Ignoto Numine</em></td>
<td>Piano Trio</td>
<td>14'</td>
</tr>
<tr>
<td>1986</td>
<td><em>View From Mt. Nebo</em></td>
<td>Piano Trio</td>
<td>15'</td>
</tr>
<tr>
<td>1984</td>
<td><em>Glyph</em></td>
<td>Solo Viola, String Quartet &amp; Piano</td>
<td>16'</td>
</tr>
<tr>
<td>1983</td>
<td><em>Icarus</em></td>
<td>Violin &amp; Piano</td>
<td>18'</td>
</tr>
<tr>
<td>1983</td>
<td><em>Werther</em></td>
<td>Flute, Clarinet, Violin, Cello &amp; Piano</td>
<td>9'</td>
</tr>
<tr>
<td>1982</td>
<td><em>Akhmatova Songs</em></td>
<td>Mezzo, Flute, Clarinet, Violin, Cello &amp; Pno</td>
<td>10'</td>
</tr>
</tbody>
</table>

**Choral Music**

<table>
<thead>
<tr>
<th>Year</th>
<th>Work Title</th>
<th>Ensembles/Instruments</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td><em>The Jumblies</em></td>
<td>SSA + piano</td>
<td>6'</td>
</tr>
<tr>
<td>2007</td>
<td><em>Why the Caged Bird Sings</em></td>
<td>SATB + piano</td>
<td>4'</td>
</tr>
<tr>
<td>2006</td>
<td><em>The Jabberwocky</em></td>
<td>TTBB</td>
<td>4:30'</td>
</tr>
<tr>
<td>2004</td>
<td><em>Amulet</em></td>
<td>SSA</td>
<td>3'</td>
</tr>
<tr>
<td>2001</td>
<td><em>Alleluia</em></td>
<td>SATB</td>
<td>4;</td>
</tr>
<tr>
<td>2000</td>
<td><em>Shapirt Y’fehiah</em></td>
<td>SSA</td>
<td>3'</td>
</tr>
<tr>
<td>1998</td>
<td><em>Songs of War and Peace</em></td>
<td>Chorus (SATB) and Piano</td>
<td>15’</td>
</tr>
<tr>
<td>1996</td>
<td><em>Nun, Gimel, Hei, Shin</em></td>
<td>Chorus (three-part)</td>
<td>ca. 4’</td>
</tr>
<tr>
<td>1996</td>
<td><em>Adonai Roi</em></td>
<td>Chorus and String Orchestra</td>
<td>3’</td>
</tr>
<tr>
<td>1995</td>
<td><em>Adonai Ro’i</em></td>
<td>Chorus</td>
<td>3’</td>
</tr>
<tr>
<td>1993</td>
<td><em>COAL-94</em></td>
<td>Chorus, Appalachian Instruments (Banjo, Fiddle, Guitar, Dulcimer, 2 Appalachian Singers), Synthesizer and Electronic Playback</td>
<td>90’</td>
</tr>
<tr>
<td>1993</td>
<td><em>Beetles, Monsters and Roses</em> (ClickBeetle, Someone, I Am Rose, The Wendigo)</td>
<td>Four songs for SSA and Electronic Playback</td>
<td>14’</td>
</tr>
<tr>
<td>1992</td>
<td><em>We Hold These Truths</em></td>
<td>Chorus, Brass Quintet, Timpani</td>
<td>16’</td>
</tr>
<tr>
<td>1991</td>
<td><em>Hark My Love</em></td>
<td>Chorus and Piano</td>
<td>3.5’</td>
</tr>
</tbody>
</table>
### Orchestral Music

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Performers/Details</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td><em>Jefferson, In His Own Words</em></td>
<td>Narrator + orchestra (4 movements)</td>
<td>25’</td>
</tr>
<tr>
<td>2008</td>
<td><em>Songs of War and Peace</em></td>
<td>SATB + chamber orchestra</td>
<td>17’</td>
</tr>
<tr>
<td>2002</td>
<td><em>Singing the Blue Ridge</em></td>
<td>Mezzo, Baritone, Orchestra, Electronics from Wild Animal Calls</td>
<td>14’</td>
</tr>
<tr>
<td>1991</td>
<td><em>Stringing the Bow</em></td>
<td>String Orchestra</td>
<td>15’</td>
</tr>
<tr>
<td>1990</td>
<td><em>Piping the Earth</em></td>
<td>Large Orchestra</td>
<td>8.5</td>
</tr>
<tr>
<td>1985</td>
<td><em>Ruah</em></td>
<td>Concerto for Flute &amp; Chamber Orch.</td>
<td>23’</td>
</tr>
<tr>
<td>1983</td>
<td><em>The Passion of St. Cecilia</em></td>
<td>Piano Concert</td>
<td>18’</td>
</tr>
<tr>
<td>1981</td>
<td><em>Aura</em></td>
<td>Full Orchestra</td>
<td>19’</td>
</tr>
<tr>
<td>1978</td>
<td><em>Arche</em></td>
<td>Viola &amp; Orchestra</td>
<td>17’</td>
</tr>
</tbody>
</table>

### Band

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Performers/Details</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td><em>Commonwealth Salute</em></td>
<td>Concert Band</td>
<td>4’</td>
</tr>
</tbody>
</table>

### Chamber Opera

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Performers/Details</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td><em>Follies and Fancies</em></td>
<td>Sop, Mezzo, Tenor, Baritone, Bass; Fl, bssn, vln, vc, hpschd</td>
<td>55’</td>
</tr>
<tr>
<td>1981</td>
<td><em>Follies and Fancies</em></td>
<td>Sop, Mezzo, Tenor, Baritone, Bass, Piano</td>
<td>55’</td>
</tr>
</tbody>
</table>

### Electronic and Electroacoustic Music

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Performers/Details</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td><em>Spring Tides</em></td>
<td>Fl, Cl, Vln, Vc, Piano, Interactive Electronics</td>
<td>11’</td>
</tr>
<tr>
<td>2009</td>
<td><em>Rotunda</em></td>
<td>Computer Music Video (video by Robert Arnold)</td>
<td>15’</td>
</tr>
<tr>
<td>2008</td>
<td><em>Persephone</em></td>
<td>Electronic Playback for Dance</td>
<td>18’</td>
</tr>
<tr>
<td>2007</td>
<td><em>Civil War Memories: Inside Out</em></td>
<td>Computer Music Video (video by Lydia Moyer)</td>
<td>9:08’</td>
</tr>
<tr>
<td>2007</td>
<td><em>Kairos</em></td>
<td>Version for Flute and Max-MSP</td>
<td>16’</td>
</tr>
<tr>
<td>2005</td>
<td><em>Penelope’s Song</em></td>
<td>Versions for clarinet + electronics and violin plus electronics</td>
<td>9:30’</td>
</tr>
<tr>
<td>2005</td>
<td><em>For the Birds</em></td>
<td>Amplified cello and electronic playback</td>
<td>14’</td>
</tr>
<tr>
<td>2005</td>
<td><em>Civil War Memories</em></td>
<td>Electronic playback</td>
<td>19’</td>
</tr>
<tr>
<td>2004</td>
<td><em>Cherry Blossom and a Wrapped Thing: After Hokusai</em></td>
<td>Clarinet and multichannel audio (stereo version also available)</td>
<td>7:52</td>
</tr>
<tr>
<td>2003</td>
<td><em>Tree Music</em></td>
<td>Interactive Installation</td>
<td>Var.</td>
</tr>
<tr>
<td>2003</td>
<td><em>Penelope’s Song</em></td>
<td>Amplified Viola, electronic playback</td>
<td>9:30’</td>
</tr>
<tr>
<td>2001</td>
<td><em>Grito del Corazon</em></td>
<td>Version 1: fl, vln, cello, keyboards</td>
<td>5:05’</td>
</tr>
<tr>
<td>1997</td>
<td><em>Sea of Reeds</em></td>
<td>Clarinet and Live Electronics</td>
<td>14’</td>
</tr>
<tr>
<td>1995</td>
<td><em>Elijah’s Chariot</em></td>
<td>String Quartet and Electronic Playback</td>
<td>18’</td>
</tr>
<tr>
<td>1993</td>
<td><em>Beetles, Monsters and Roses</em></td>
<td>Four songs for SSA and Electronic Playback</td>
<td>14’</td>
</tr>
<tr>
<td>1991</td>
<td><em>Kairos</em></td>
<td>Amplified Flute and interactive electronics</td>
<td>16’</td>
</tr>
<tr>
<td>1990</td>
<td><em>Hosech Al P’ney HaTehom</em> (Darkness Upon the Face of the Deep)*</td>
<td>Electronic playback</td>
<td>11.5’</td>
</tr>
<tr>
<td>1989</td>
<td><em>Three Summers’ Heat</em></td>
<td>Mezzo or soprano and electronic playback</td>
<td>19’</td>
</tr>
</tbody>
</table>
## Evaluation Report Form for Program Proposals

<table>
<thead>
<tr>
<th>Institution:</th>
<th>Conservatory of Music Brooklyn College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluator(s):</td>
<td>Brad Garton, Columbia University</td>
</tr>
<tr>
<td>Program title:</td>
<td>Program in Sonic Arts</td>
</tr>
<tr>
<td>Degree title:</td>
<td>Master of Fine Arts</td>
</tr>
<tr>
<td>Date of evaluation:</td>
<td>April 4, 2015</td>
</tr>
</tbody>
</table>

### I. Program

1. Assess program purpose, structure, and requirements as well as formal mechanisms for program administration and monitoring.

The new Program in Sonic Arts seems an excellent idea for Brooklyn College. Brooklyn College has had a solid reputation in music technology (the Brooklyn College Center for Computer Music is one of the oldest extant programs in the US), and this new initiative seems a logical move to take if BC is to retain its position in the field.

The requirements seem reasonable for an MFA program. We have a similar 60-credit coursework requirement for our new Sound Arts MFA program at Columbia. Because this is a developing field, I would suggest that you retain as much flexibility in your classes as possible. Don’t assume too strongly that the particular make-up of courses today will be relevant in the future. I’m also not clear on exactly which courses are in fact required and which courses form a portion of a ‘distribution’-type requirement. I’m also not sure which (if any) classes are prerequisites for later classes. Structural aspects like these can impact how difficult it will be to staff the classes necessary to complete the MFA.

I can’t really comment on the internal administration and monitoring mechanisms, but I do know many of the faculty members involved with the program. They are an accomplished and competent group, and my confidence in their ability to run a successful program is high.

2. Comment on the special focus of this program, if any, as it relates to the discipline.

The field of Sound Arts is rapidly expanding, and from my perspective it could soon equal and surpass existing media technology or computer music programs. Because it engages a range of developing techniques and technologies, these new Sound Arts programs cater to students who will be poised to fill leadership roles in future music/media technology positions (in academia and industry). I believe that viable programs will need to embrace this broader technological context if they want to retain a relevant connection to cutting-edge work.
3. Comment on the plans and expectations for continuing program development and self-assessment.

It will be important to retain pedagogical flexibility because the Sound Arts field is growing and changing. The ability to hire additional full-time or adjunct faculty as new areas of creative development open up will be critical to maintain a strong and vibrant program.

4. Assess available support from related programs.

Being an ‘outsider’, I can’t answer this directly. I can tell you that we had to be very careful about the teaching and resource burden we would potentially place on our colleagues in other disciplines when we instantiated our own Sound Arts MFA. Accepting a new class of students with the desire to learn techniques in sculpture, digital signal processing, aesthetics, etc, can stress already crowded classes and facilities. So far our experience has been positive with our program, but we are not as large as yours is projected to be.

5. (Only for programs requiring master plan amendment.) What is the evidence of need and demand for the program locally, in the State, and in the field at large? What is the extent of occupational demand for graduates? What is the evidence that demand will continue?

II. Faculty

6. Evaluate the faculty, individually and collectively, in regard to training, experience, research and publication, professional service, and recognition in the field.

I’m not going to comment on every faculty member involved in this program because I don’t need to. They are all terrific. Two of them (Geers and Eckardt) are former students of mine, and the others I know by acquaintance and/or professional reputation. Given the specific aims of your Sonic Arts MFA program, this faculty should act as a real attractor for students. They certainly have the expertise to teach the current state-of-the-art. If you have particular concerns about any of the projected faculty, please don’t hesitate to contact me if my perspective can help.

7. Assess the faculty in terms of size and qualifications. What are plans for future staffing?

I don’t know what the course-load is for BC faculty, and I’m not sure if the faculty listed for this program have teaching obligations outside the Sonic Arts MFA track. Much depends on which classes will be offered in a given semester from the full Sonic Arts course listing. Given the intensive and individually-centered nature of Sonic Arts work and the projected program size, the faculty resources may be a little thin (especially if some of the faculty will also be involved in the administration of the program).

The BC Sonic Arts program is also focused almost exclusively on the audio aspect of Sound Arts. This is fine, and it is probably an appropriate initial limit to place on the program. As it develops, however, you may want to expand to encompass more physical computing or other media work, engaging faculty with skills in sculpture, video, film, visual arts, etc. I can imagine students in your program wanting to do work inspired by Sound Artists such as Janet Cardiff, Douglas
Repetto, Tristan Perich, or Marina Rosenfeld. They all engage contextual elements of sound presentation that you may also want to address.

I think you can accomplish this by including an aggressive (and appropriately-compensated) adjunct faculty program. At present, you only have one adjunct position listed in the proposal. One of the great advantages of launching such a program in New York is the range and depth of talent that can be drawn upon. You should take advantage of this in your Sonic Arts MFA!

8. Evaluate credentials and involvement of adjunct and support faculty.

(see my previous answer)

III. Resources

9. Comment on the adequacy of physical resources and facilities, e.g., library, computer, and laboratory facilities; practica and internship sites; and support services for the program, including use of resources outside the institution.

Again, I can’t say directly much about the adequacy of your resources and facilities, because I simply don’t know them. However, I can warn you that many Sound Arts activities require studio spaces for students to do their work. Of course students will need access to tools, hardware, and software but they will also need space to use these resources in crafting their own pieces.

10. (Only for programs requiring master plan amendment.) What is the institution's commitment to the program as demonstrated by the operating budget, faculty salaries, and the number of faculty lines relative to student numbers and workload.

IV. Summary Comments and Additional Observations

11. Summarize the major strengths and weaknesses of the program as proposed with particular attention to feasibility of implementation and appropriateness of objectives for the degree offered. Include any further observations important to the evaluation of this program proposal and provide any recommendations for the proposed program.
This seems like an excellent proposal to me, and (again) it is something you need to do if you want to retain relevance in music technology. In evaluating this proposal, I am drawing on the recent experience we’ve had in mounting our own Sound Arts MFA program. The BC proposal is aimed differently than ours, however, and you should take that into consideration as you read my critique. We are also a much smaller program, but that is because of physical constraints we have that precludes us from accepting more than four students each year. I am assuming that you can handle the load you are projecting.

The biggest difference between our program and yours is the stronger focus on the audio aspect of Sound Arts in your MFA program. This seems appropriate to me, especially given your current faculty resources. However, be wary of letting the program devolve into another “recording studio tech” program with no broader vision of the range of contemporary Sound Arts practice. There are a number of existing “recording studio tech” programs, and they are generally following the development of the field, not leading it. With your faculty and with adequate support, you can indeed lead the field. This is an exciting thing to do.
Bradford Glenn Garton  
Music Department/Computer Music Center  
Prentis Hall, Columbia University  
632 West 125th Street  
New York, NY 10027  
(212)854-3825 – work  
(609)448-9214/(609)384-1230 – home/cell  
garton@columbia.edu  
http://music.columbia.edu/~brad

EDUCATION
PhD. (music composition); Princeton University [5/1989]  
MFA (music Composition); Princeton University [5/1985]  
1 year graduate work (psychoacoustics); Purdue University [1/1980 – 12/1980]  
BS (pharmacology); Purdue University [12/1979]

RECENT PROFESSIONAL ACTIVITIES
current research projects:
real-time interfaces for complex music systems  
mobile-computing platform tools development  
data-auralization software and applications development  
alternative music interface design  
interconnected music language objects  
musical style simulation and performance modeling  
virtual modeling and real enhancement of acoustic spaces  
music pedagogy web-based software development

selected software packages:
ofRTcmix – OpenFrameworks/RTcmix integration  
aRTcmix – port of the RTcmix music language for Android devices  
iRTcmix – port of the RTcmix music language for the iOS (iPhone/iPad) platform  
[sc3~] – encapsulation of the SuperCollider music language in Max/MSP  
[maxlisp]/[maxlispj] – real-time Common Lisp interpreter for Max/MSP  
[chuck~] – encapsulation of the ChucK music language in Max/MSP  
[rtcmix~] – encapsulation of the RTcmix music language in Max/MSP  
RTcmix – real-time music digital synthesis and signal processing language  
The Brainwave Music Project – EEG sonification (with Dave Sulzer)  
JPMorgan Chase KIDS Digital Movement and Sound CDROM – pedagogical software  
Riff-o-matic/Piece-o-matic – virtual performance models  
StylEvolve – musical style evolution model  
mFFT – real-time FFT/DIEM dance suit interface  
fredspace – simple interactive pitch-space model  
dimension9 – real-time interactive exploration of 9-dimensional music timbre space (done with Chris Bailey)  
VMEbus audio conversion device driver  
[see http://music.columbia.edu/~brad/software/ for additional work]

organizational activities:  
Director, Columbia University Computer Music Center [1996 – current]
Deputy Director, Columbia University Center for Japanese Studies [2014 – current]
Acting Director, Columbia University Sound Arts MFA Program [2012 – 2013]
Co-organizer/performances and workshops, Columbia CMC at Escrita na Pasaigem Festival; Evora/Alentejo, Portugal [2008 – current]
Developer, new interdisciplinary courses at Columbia University [2000 – current]
Co-organizer/Sponsor, "Masterpieces of Tape Music"; Lincoln Center Summerfest 2000
Co-organizer/Sponsor, 1999 IRCAM New York Festival
Co-organizer/Sponsor, 1999 Interactive Arts Technology Festival
Music Director, 1997 International Computer Music Conference
Associate Director, Institute for Psychoacoustic and Music Research (IPSA), University of Thessaloniki Medical Center [1996 – 2001]
Associate Editor, Perspectives of New Music [1995 – 2000]
Board of Directors (officer), International Computer Music Association (ICMA) [1993 – 1997]
Editor, ARRAY (ICMA Newsletter) [1993 – 1997]
Artistic Director, Real Music Series, New York [1992]

recent grants/income generated (approximate amounts):
Summer Workshop Grant (Tokyo/Karuizawa) [$24,000] – Toshiba Foundation
Music Information Retrieval Grant [$500,000] – Mellon Foundation (CMC support, with the Center for Jazz Studies and LabROSA)
Columbia 250 Event [$150,000] – CU 250 Fund
Digital Sound Environments Project [$430,000] – anonymous private donor
Music Technology Initiative [$1,100,000] – Office of the Executive Vice Provost
CMC hardware/software upgrade [$90,000] – Office of the Executive Vice Provost
Sound Preservation/Archive project (spoken Yiddish) [$30,000] – Federal Republic of Germany
Sound Preservation/Archive project (spoken Yiddish) [$50,000] – Littauer Foundation
Sound Preservation/Archive project (music) [$300,000] – National Endowment for the Humanities
Sound Preservation/Archive project (music) [$300,000] – New York State Council on the Arts
Digital Audio Mastering Software [$20,000] – WAVES, Inc.
CMC Digital Recording Facility upgrade [$300,000] – anonymous private donor
Kids Digital Sound and Movement project [$200,000] – JPMorgan Chase

computer music facility design consultation (partial list):
New York University
Bard College
Smith College
Brooklyn Polytechnic University
Cincinnati Conservatory of Music
Center for New Music (KSYME); Athens, Greece
University of Thessaloniki
National University of Uruguay
Tokyo College of Engineering
Tamagawa University
National University of Taiwan
Brooklyn College (CUNY)
Lehman College (CUNY)
Yale University
Harvard University
Princeton University
University of Virginia
Georgia Tech University
Arizona State University
University of Minnesota
Purdue University
Virginia Tech University
Manhattanville College
Rensselaer Polytechnic University
Indiana University
Moorehead State University
Texas A & M University
UC-Santa Barbara
University of Pennsylvania
Dartmouth College

WORK EXPERIENCE
Full, Associate and Assistant Professor (music composition), Director of Computer
Music Center, Columbia University Music Department [7/1987 – current]

Acting Director, Sound Arts MFA Program, Columbia University School of the Arts
[8/2012 – 5/2013]

Associate Faculty, Tamagawa University; Tokyo Japan [10/2003 – current]

Associate Professor, Cincinnati Conservatory of Music [1/1994 – 6/1995]

Associate Faculty, Aristotle University of Thessaloniki [9/1995 – 7/2000]


Programmer/Consultant (various clients) [1985 – current]


Graduate Student Director, Princeton University Tape Studio [8/1983 – 6/1987]


Editor, VIBRATIONS (National Association of Noise Control Officials Newsletter)

Director, Noise Abatement Program, Indiana Association of Cities and Towns

Co-owner/Producer, Zounds Productions (multi-track recording facility)
Research Assistant, Purdue University School of Speech and Hearing Science

Undergraduate Teaching Assistant, Purdue University Department of Statistics

RELATED WORK
– extensive professional recording experience, numerous production credits (records, videotapes, films, broadcast radio/TV)
– experience with large-scale multi-media installations
– composed music for a wide variety of commercial applications
– designed sound/composed music for many theatrical productions

FELLOWSHIPS, COMMISSIONS AND AWARDS
2015 Lenfest Distinguished Faculty Award, Columbia University
First-awarded Klingler Electroacoustic Residency, Bowling Green State University
Institute for Japanese Studies (Columbia) commission for Gagaku ensemble
Princeton Laptop Orchestra (PLOrk) Inaugural Performance Commission
NCSU New Music Festival Composition Commission
NTT 10th Anniversary Festival Music Commission (Suntory Hall, Tokyo)
Bard College Fellow
Associate Fellow, Center for Arts and Technology; Connecticut College
Visiting Composer and Research Consultant, Center for New Music Research (KSYME); Athens, Greece
Association for Computing Machinery award for Excellence in Technical Writing
Princeton University Fellowship
Phi Eta Sigma, Eta Sigma Gamma (honorary societies)
Hoosier Scholar
American Heart Association Research Award

COMPUTER SKILLS
Programming Languages: C, C++, Objective-C, Lisp, HTML, Perl, Java, Max/MSP, FORTRAN, BASIC, JCL
Operating Systems: Unix (kernel experience), Mach, MS-DOS, MacOS(9.x & 10.x), iOS, Android, OS/VM370, (CMS), TSO

PROFESSIONAL SOCIETY MEMBERSHIPS
International Computer Music Association
Society of Electroacoustic Musicians-US (SEAMUS)
New Jersey Guild of Composers
Acoustical Society of America
National Association of Noise Control Officials

PUBLICATIONS
Are We Postmodern Yet? (forthcoming) – book chapter in Jonathan Kramer’s Postmodernism (Bloomsbury Press; London)

http://music.columbia.edu/~brad/MemoryBook
“RTcmix Documentation” (current) – http://rtcmix.org

“iRTcmix Documentation” (current) – http://music.columbia.edu/iRTcmix

Interactive Folk Music: Two Laptops + a Mandolin (2009) – the Indiana University Digital Arts and Humanities series


iLooch (2010) – generative music app for the iPhone/iPad/iTouch (available in the Apple App Store)

“Experiences with ‘Welcome Sound’” (2009) – invited publication; Cycling ’74 website (http://cycling74.com/2009/06/12/experiences-from-welcome-sound/) [with Grosse/Pender/Trueman/Taylor]


“Multi-language Max/MSP” (2007) – invited publication; Cycling ’74 website (http://cycling74.com/2007/03/26/multi-language-maxmsp/)


"Recent Developments at the Columbia University Computer Music Center" in Current Musicology, number 66 (2001), Columbia University Music Department; New York.

"Technology, me" in 1998 issue of The Open Space Web Magazine (http://www.the-open-space.org/osonline/osonline.html)


"Review of Music and Connectionism (Peter Todd and D. Gareth Loy, eds.)" in V.79(2) [1996] of Artificial Intelligence, Elsevier Science Publishing; Amsterdam, ND


"Using CMIX -- Part 1" in Summer, 1993 issue of ARRAY: the Quarterly Publication of


Guest Editor for Winter, 1992 issue of News of Music, Bard College; Annandale-on-Hudson, New York.


"It's not real, so we can do what we want" in Proceedings of the Second International Greek Music and Psychoacoustics Conference (1992); KSYME, Athens, Greece.

"The Guitarist in my Cube" in NeXT on Campus (1992), NeXT Inc.; Redwood City, California.


"Composition is a Political Act" in Spring, 1991 issue of News of Music, Bard College; Annandale-on-Hudson, New York.


"Artistic Responsibility", Guest Editorial in December 1999 issue of KEYBOARD magazine, Miller Freeman Publications; San Francisco.
"The Elthar Program" in Winter, 1989 issue of Perspectives of New Music, University of Washington; Seattle.


"Noise Control Enforcement Handbook" (1982), Indiana Association of Cities and Towns; Indianapolis.

"Model Noise Control Ordinance for Stationery and Moving Sources" (1981), Indiana Association of Cities and Towns; Indianapolis.

Roosevelt Borough Bulletin music reviews:
“Fletch and Dave's Excellent (Digital) Art” (2008)
http://music.columbia.edu/~brad/writing/papes/Fletcher_and_Dave_review.html

http://music.columbia.edu/~brad/writing/papes/Art_Walk_review.html

“The Thirties concert review” (2007)
http://music.columbia.edu/~brad/writing/papes/The_Thirties_review.html

“Roosevelt Arts Project Open Mic concert review” (2006)

“Mark Zuckerman concert review” (2005)
http://music.columbia.edu/~brad/writing/papes/Mark_Zuckerman_review.html

INVITED LECTURES and PERFORMANCES
(presented to the following organizations/locations/functions):

Featured Performer – NYU Interactive Arts Performance Series Fall 2014
Keynote Speaker (with Dave Sulzer) – 2014 NIH Graduate Student Conference, Bethesda MD
Featured Performer/Speaker (with Dave Sulzer) – CUriosity3: Sound in Art and Science – Columbia University School of the Arts (2014)
Featured Performer/Speaker (with Dave Sulzer) – Dorkbot-NYC (2014)
Featured Performer/Speaker (with Dave Sulzer) – Art+Lab: Music and the Mind – Rockefeller University (2014)
Japanese lectures – Tamagawa University, Kunitachi College of Music, Tokyo College of Engineering (2013)
Invited lecture (with Dave Sulzer) – Best of Brainwave – Rubin Museum of Art (2013)
Keynote speaker and featured composer – Virginia Tech University Digital Interactive Sound and Intermedia Studio Spring Festival (2011)
Featured speaker/performance – Abstraction and Passion: The Brainwave Music Project at Entertaining Science!
at the Cornelia Street Café (January, 2011) with Dave Sulzer and Roald Hoffman

Featured Speaker – February 2011 “Dorkbot” meeting, Location 1 Gallery, New York
Featured performer/Keynote Speaker – Escrita na Pasaigem Festival 2010, Evora, Portugal
(funded 3 graduate students and 2 colleagues to attend)
Featured performer – Festival Músicas do Mundo 2010, Sines, Portugal
(with Terry Pender and Gregory Taylor)
Featured performance – CMC at (le) Poisson Rouge, New York, 2010
(with Terry Pender and Maja Cerar)
Featured Speaker – Institute for Digital Humanities at Indiana University (2009)
Escríba na Pasaigem Festival (2009) – Evora/Alentejo Portugal,
(featured performer/speaker)
2009 Expo ’74 – the First Max/MSP International Conference (featured speaker)
2009 “Light in Winter” Festival, Cornell University (with David Sulzer)
[presentation/performance]
“Brain Beats” – 1 hour show on PBS station WPHY, Philadelphia (with David Sulzer)
[presentation/performance]
Featured speaker/performance, Strange Sounds series, Purdue University (2008)
2008 SEAMUS Conference (featured panel)

Guest Artist, Remember Those Quiet Evenings, 2-hour radio broadcast,
WORT (Madison WI)
2007 Australasian Computer Music Conference (keynote speaker)
SPARK Festival of Electronic and Computer Music (University of Minnesota – keynote speaker/featured composer)
Third Practice Electroacoustic Music Festival (invited software presentation)
North Carolina new Music Festival (NCSU – keynote speaker/featured composer)
2005 Feminist Theory and Music Conference (ftm8) – (featured panel)
“Listening in the Sound Kitchen” (Princeton University Conference – keynote speaker)
“Tech-to-go 3” (NY City Board of Education Conference – featured presenter)
Kobe Hall (Tokyo, NTT Media and Communications Laboratories 10th Anniversary Celebration, keynote speaker)

Tamagawa University
Stetson University
Bennington College
Western New England College
University of Evora (Portugal)
Brooklyn Polytechnic Multimedia Program
Utah Valley University
Keio University
Kunitachi College of Music
Tokyo College of Engineering
Tokyo Denki University
Texas A&M Music Department
Cincinnati Conservatory of Music
University of Virginia Music Department
New York University Music Department
Rovaniemi Institute of Technology (Second International Mathematica Conference)
University of Thessaloniki Institute for Music and Psychoacoustic Research
Center for New Music Research (KSYME)
National University of Uruguay Music Department
Brigham Young University
Princeton University Music Department
Skidmore College Music Department
UC-Santa Barbara Music Department
Dartmouth College
Stanford University (Center for Computer Research on Music and Acoustics -- CCRMA)
UC-Berkeley (Center for New Music and Audio Technologies -- CNMAT)
Washington DC NeXT Users Group ("Super Seminar")
Columbia University Academic Computing Information Services ("Teaching and Learning Showcase")
Rutgers University Association for Computing Machinery (ACM) Chapter
New York NeXT Users Group (founding meeting)
Yale University Music Department
Columbia University Association for Computing Machinery (ACM) Chapter
Columbia University School of Engineering
Brooklyn College Summer Computer Music Seminar
US-sponsored lecture tour of ten theatrical production companies, Europe
United States Institute of Theatrical Technicians (USITT)
American Theatrical Association (ATA)

MUSIC
(see http://music.columbia.edu/~brad for full listing, notes and on-line music)

On-going improvisational work with “PGT” – http://music.columbia.edu/~brad/PGT
   (Terry Pender and Gregory Taylor, real-time performance)

longdue (2014) – computer-generated tape
bradlabels (2014) – four etudes, computer-generated tape
pre-class-pieces (2014) – computer-generated tape
Lian-Itay Recessional (2014) – string trio
Lian-Itay Ambience (2014) – string trio
BGSU I-5 (2014) – 8-channel computer generated tape (BGSU-KEAR residency)
…DESU (2014) – Gagaku instruments (koto, biwa, shō) + computer
FG (2013/2014) – with Karl Fury (guitar), real-time performance
g60 (2013) – computer generated tape
craicness (2013) – computer generated tape
F1, F2 (2013) – computer generated tape + performance
TSPACE (2013) – four pieces, computer generated tape
daniel-trace (2012) – piano (Daniel Garton) + computer generated tape
continuance (2012) – guitar + computer generated tape
through (2012) – computer generated tape
transplant-wait (2012) – computer generated tape
the Majas (2012) – three pieces, violin (Maja Cerar) + computer generated tape
sometimes chords (2011) – computer generated tape
nor (2011) – computer generated tape
GuitarMiller (2011) – three pieces, guitar (Miller Puckette) + computer generated tape
RAP-event-2011 (2011) – real-time improvisation, laptop
City Soundings (2011) – on-line collaborative computer generated tape piece
manta-iphone-vatech (2011) – real-time improvisation, laptop + iPhone
Some Parts I Like (2011) – computer generated tape
fallpiece (2010) – computer generated tape
guitar-process (2010) – seven etudes, computer generated tape
iLooch (2010) – generative music app for the iPhone/iPad/iTouch
   (available in the Apple App Store)
I Gotta Guitar (2010) – guitar + computer generated tape
inside-snow (2010) – computer generated tape
mantadue (2010) – computer generated tape
Manta fantasies (2009) – computer generated tape
aug09 pieces (2009) – computer generated tape
Counterdrift (2009) – computer generated tape

Welcome Sound: PGTGTr performance (2009) – real-time performance improvisations, large-scale multimedia event
The Infinite Recursion of Joy (2009) – computer generated tape
homesounds (2008) – piano (Lian Garton) + computer generated tape
GTr pieces (2008) – real-time performance improvisations
Music for EEG, performers and computer (2008-current)– interactive brain-wave generated music with various musicians
dlooch (2007) – algorithmic software music, internet distribution (featured on Apple Computer web site)
mm-2(snow) (2007) – algorithmic software music, internet distribution
mm-pieces (2006-7) – computer generated tape
hohoho2-matic (2006-7) – algorithmic software music, internet distribution
PGT pieces (2005-current) – real-time performance improvisations
   (CD release of selected work: “Temporary Habitations”; Loochtone Music)
summer2006 (2006) – seven etudes, computer generated tape
mando::summer (2006) – real-time performance improvisations
look-ma-no-hands (2006) – interactive performance for Yamaha Disklavier piano and video-tracking system
Idle Swamp (2006) – 16 laptop computers (commissioned by the Princeton Laptop Orchestra [PLOrk])
gods (2005) – computer-generated tape
guns (2005) – computer-generated tape
auld-o-matic (2005) – algorithmic software music, internet distribution
hohoho-matic (2005) – algorithmic software music, internet distribution
gregmentary [1, 2, 3, 4, 5] (2004-5) – computer generated tape
For Jonathan (2004) – piano
Soundcheckramadan (2002) – computer generated tape
mlooch, jlooch, jnissa (2001-2) – algorithmic software music, internet distribution
Chapter 16 (2001) (text: Thomas Pynchon) – SATB choir
Silence in September (2001) – handbell choir
D-ness (2001) – computer generated tape + piano
Connection Piano (2001) – computer processing, internet exchange, + piano
Atmen (2000) – computer generated tape
c-t (2000) – computer generated tape + piano
Infralong (2000) – computer generated tape
RAP Poets (1999) – computer
Terry and Amy Music (1999) – mandolin + soprano
I am Dying (1998) – computer + mandolin
reRefuge (1998) – computer generated tape
rePpHage (1998) – computer generated tape
Small Pieces (1998) – computer generated tape
Dan's Toys (1997) – computer generated tape
Dan's Toys [ambient] (1997) – computer generated tape
Piano Piano (1995) – computer generated tape
Good Leadership (1994) (text: Tom Murtha) – computer generated tape
Southside Silence (1993) – computer generated tape
Stay (1993) – piano + violoncello
Reich-o-Matic (1992) – computer
Gather to (1992) – two pianos
Home Guitars (1992) – computer generated tape
Chaos Kitty – computer
Almost Real (1991) – computer generated tape
Jon&Brenda Music (1991) – pipe organ
Rough Raga Riffs (1991) – computer generated tape
Stead (1991) – piano
Crooked Concert and the Talking Mushrooms (1990) – multi-media interactive environment (collaboration with Wiska Radkiewicz, Judith McNally, Rod Tulloss, Eric Vuolle)
Water Action (1990) – outdoor sound improvisation (collaboration with the townspeople of Roosevelt, NJ and guests from Bard College)
HA! doodledy doodely (1990) – computer generated tape + electric guitar
Looching (1990) – NeXT computer
Two Small and Quiet Piano Pieces (1989) – piano
Sleeps All Night (1989) – computer generated tape
Roosevelt Live (1988) – computer + piano
Roosevelt Delay (1988) – Yamaha DX7, TX802 + analog delay
Approximate Rhythms (1988) – computer generated tape
There's no place like Home (1987) – computer generated tape [PhD. dissertation piece]
Wasting (1986) (text: Richard Kostelanetz) – computer generated tape (collaboration with Paul Lansky and Andrew Milburn)
House of Sound (1986) – large-scale improvisation
Definite Time, Definite Place (1985) – computer generated tape
Hwang Hu Lo (The Yellow Crane Pagoda) (1985) (text: Tswei Hau) – piano + soprano
Many Guitars (1985) – computer generated tape
Hens Flying Overhead (1984) – piano
Loochsong (1984) – computer generated tape
Obligations (1984) – string quartet
Relationships (1984) – computer generated tape
Wedding Music (1983) – pipe organ; string quartet
Building Music (1983) – large orchestra
Columbus Music (1983) – large orchestra