

Curriculum Vitae
Nathan L. Brock, Ph.D.

Education

- Graduate: University of California, San Diego (La Jolla, CA)
Master of Arts in Music Composition, 2002
Ph.D. in Music Composition, 2007
Roger Reynolds, dissertation advisor
- Undergraduate: University of Louisville (Louisville, KY)
Bachelor of Music, Composition, 2000
Bachelor of Arts, Literature and Mathematics, 2000

Teaching and Research Experience

- Associate Development Engineer (Post-Doctoral position), California Institute for Telecommunications and Information Technology (CalIT2), 2008-present
Instructor, School of Music, San Diego State University, 2011-present
Research Associate, Center for Research in Computing and the Arts, San Diego, 2007-present
Adjunct Faculty, Music Department, University of San Diego, 2007-present
Private Instruction in Composition and Audio Engineering, 2005-present
Adjunct Faculty, Music Department, California State University, Fullerton, 2007
Research Assistant, Studio Recording, Music Department, UCSD, 2004-2007
Instructor, Music Department, University of California, San Diego, 2006
Teaching Assistant, Music Department, UCSD, 2001-2002, 2003-2007
Research Assistant, Recording and Dubbing, Music Department, UCSD, 2003-2004
Teaching Assistant, Eleanor Roosevelt College Writing Program, UCSD, 2002-2003

As Instructor of Record:

- Composition Laboratory (at SDSU): Spring 2011
Digital Audio Composition (at USD): Spring 2009, Spring 2010, Spring 2011
Tonal Harmony I (at USD and CSUF): Spring 2007, Fall 2007 (two sections), Spring 2008, Spring 2009
Tonal Harmony II (at USD and CSUF): Fall 2007 (two sections)
Keyboard and Aural Skills I (at USD): Spring 2008
Keyboard and Aural Skills II (at USD): Fall 2008
Music and Society in the Enlightenment* (at UCSD): Summer 2006
Introduction to Western Music (at UCSD): Spring 2006
*this course designed by Brock

As Teaching Assistant (all at UCSD), courses including:

- Studio Mixing and Editing; Musical Acoustics; Digital Studio Techniques: Mixing; Ragtime; Opera;
Contemporary Music; The Blues; Techno Music; Digital Studio Techniques: Editing; Music, Science, and
Computers; J.S. Bach; Klezmer Music; American Music

As Guest Lecturer:

- Form and Analysis (USD), Digital Audio Composition (USD), Harmony II (USD), Introduction to Western
Music (UCSD), American Music (UCSD), Digital Studio Techniques (UCSD), Studio Mixing and Editing
(UCSD), Electronic Music (UCSD)

Courses within ability to teach:

- Composition, either in group or individual lessons;
Networked audio and media streaming, for creative and industrial applications;
Recording studio techniques, for future engineers or for composers and performers, including creative uses of
the studio;
Electronic music, theory, technology, and composition;
Music theory, including traditional harmony, Schenkerian analysis, set theory, formal analysis, and other areas
of Classical and contemporary theory;
Contemporary music, its history, theory, and practice;
Western Classical music history, all periods;
Interdisciplinary arts, connecting music with other genres, especially film and literature.

Composition Studies

Roger Reynolds (Master's and Ph.D. Committee Chair), UCSD, 2001-2007
Rand Steiger, UCSD, 2001-2002
Chaya Czernowin, UCSD, 2000
Steve Rouse, University of Louisville, 1999-2000
Marc Satterwhite, University of Louisville, 1997-1999
Frederick Speck, University of Louisville, 1995-1997
Alan Beeler, Eastern Kentucky University, 1993-1995

Audio Engineering and Electronic Music Studies

Peter Otto, UCSD, 2002-2007 (computer music, multi-channel audio, networking)
Tom Erbe, UCSD, 2005-2007 (audio recording, production, sound reinforcement)
Miller Puckette, UCSD, 2000-2003 (computer music)

Research Projects

Networked post-production audio environments, 2007-present
funded with support from Skywalker Sound/ILM, Axia, NTT, Disney, CalIT2
Audio for Scalable Adaptive Graphics Environments (SAGE), 2010-present
funded with support from CalIT2, Disney, the Electronic Visualization Lab at UI Chicago
Audio metadata development and deployment for high-quality emerging media, 2010-present
funded with support from CineGrid Exchange
Conductor motion tracking, 2009-present (in conjunction with McGill University, Montreal, Quebec)
funded with support from CRCA, McGill University, The World Opera Project
Improved audio quality for telematic performances, 2008-present
funded with support from CRCA, UCSD Department of Music
New recording techniques to capture environmentally-specific musics, 2007-present
funded with support from CRCA

Experience as a Recording Engineer

Four years experience as the graduate student recording engineer in the professional-quality studio at UCSD, under senior engineers Josef Kucera, Tom Erbe, and Peter Otto.
Completed over a hundred recording projects, from recording through editing and mixing, in many genres, from solo pieces through large chamber ensembles, including traditional classical, improvised musics, avant-garde, popular, and jazz styles.
Familiar with the ProTools, Digital Performer, Sonic Solutions, and Pyramix environments, and with both digital and analog studios.
Has taught studio techniques as a teaching assistant and as a visiting instructor and digital audio composition as an instructor of record.

Other Work Experience

Audio Engineer (self-employed), 2006-present
Score Reader and Supertitle Engineer, San Diego Symphony Orchestra, 2001-present
Intern, Library of Congress Music Division, 2004
Pianist/Accompanist, Faith United Methodist Church, San Diego, 2000-2004
Composer Liaison, SummerFest La Jolla, 2001
Research Assistant, Concert Production, Music Department, UCSD, 2000-2001

Publications

D. Dansereau, N. Brock, J. Cooperstock. "A Particle Filter for Predicting an Orchestral Conductor's Baton Movements." IEEE Multimedia. Under review.*
N. Brock, M. Daniels, S. Morris, P. Otto. "A collaborative computing model for media post-production." Future Generation Computer Systems. Accepted for publication; will appear Spring 2011.*
N. Brock, M. Daniels, S. Morris, P. Otto. "Audio-Video Synchronization over Managed Wide-Area Networks for Post-Production." *128th AES Convention*, London, Paper 8040, May 2010.*
N. Brock, M. Daniels, S. Morris, P. Otto. "Long-Distance Uncompressed Audio Transmission over IP for Post-Production," *127th AES Convention*, New York, Paper 7945, Oct. 2009.*
N. Brock. "Audio Networking Emphasized at the Munich Audio Engineering Society Convention." <http://www.cinegrid.org>, 4 June 2009.

N. Brock. "Opportunities and Challenges at the World Opera." <http://www.cinegrid.org>, 3 June 2009.
N. Brock. *Two Scenes from Beowulf and Selections from the Tesserae/Tesseract Cycle*. Dissertation. 2007.*
* = peer reviewed

Invited Speaker Engagements

"Streaming Media for Distributed Performance." (Panel moderator) CineGrid International Workshop.
15 December 2010.
"Audio Flows for Post-Production Collaboration." CineGrid International Workshop. 13 December 2010
"Applications for High-Quality Audio over Long-Distance Networks." (Workshop chair and panelist) 129th AES
Convention, San Francisco, CA, 5 November 2010.
"Use Cases for Streaming High-Quality Media over Wide-Area Networks." Southampton University,
Southampton, Hampshire, UK, 21 May 2010.
"Distributed Performance and Musical Collaboration." CineGrid International Workshop, 7 December 2009.

Major Technology Demonstrations

"CineGrid@TIFF Event." Streaming media between AMPAS Esmeralda Space (Hollywood, CA) and the Tokyo
International Film Festival (Roppongi, Tokyo, Japan), 27 October 2010.
"CineGrid@Disney Event." Disney Studio Lot, Burbank, CA, 13 October 2010.
"Networked Cinema Post-Production Mix Theater," 2009 CineGrid International Workshop, 9 December 2009.
"Telematics for Distributed Collaborative Audio Post-Production," 2008 CineGrid International Workshop, 8
December 2008.
"CineGrid Testbed for Advanced Networked Digital Audio Post Production," CalREN-XD/HPR Workshop
2008, 15 September 2008.

Service

Conference Chair, 44th AES International Conference on Audio Networking, 2009-present
Manuscript Reviewer, Future Generation Computer Systems, 2010-present
Manuscript Reviewer, Journal of the Audio Engineering Society, 2009-present
Spring Festival Programming Committee, 2005-2006
Composition Faculty Search Committee, Graduate Student Representative, 2003-2004
Faculty Graduate Student Representative, 2003-2004
Graduate Liaison to Composition Faculty, 2002-2003
New Music Forum Programming Committee, 2000-2002
Spring Festival Programming Committee, 2000-2002

Selected Awards and Honors

Guest Composer and Performer at the SoundOn 2011 Music Festival
Meet the Composer Grant, 2011
Guest Composer at the SoundOn 2009 Music Festival
Commissioned by the Noise Ensemble, 2008
Meet the Composer Grant, 2008
Guest Composer at the SoundOn 2008 Music Festival
Commissioned by red fish blue fish percussion ensemble, 2008
Commissioned by SONOR Chamber Ensemble, 2005
Guest Composer at the XXVII Foro Internacional de Música Nueva "Manuel Enriquez," 2005
Guest Composer at the XXVI Foro Internacional de Música Nueva "Manuel Enriquez," 2004
Fellow of the 60th Annual Composers Conference at Wellesley College, 2004
Honorable Mention, ASCAP Foundation Morton Gould Young Composer Competition, 2004
University of Louisville School of Music Alumni Award, 2000
Warren Babb Award for music theory and composition, 1999
Nelson Keyes Award for music composition, 1996, 1998

Professional Society Memberships

Broadcast Music, Inc. (BMI) Member since 2007
Audio Engineering Society (AES) Member since 2008
Member of the AES Technical Committee on Network Audio Systems since 2008