



# COLBY LEIDER, PHD

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## PROFILE

*Passionately devoted to both engineering and music, I still cannot figure out which of the two is more fun. The magic happens somewhere in the middle. I like people, making things, strong coffee, family, pipe organs, farming, and learning.*

## EXPERIENCE

### MAGIC LEAP :: PLANTATION, FL

*Senior Audio Software Systems Test Engineer 06/17 – Present*

### UNIVERSITY OF MIAMI :: FROST SCHOOL OF MUSIC :: CORAL GABLES, FL

*Associate Professor of Music Engineering 09/08 – 6/17*

*Director, Frost Audio Institute 05/10 – Present*

*Founding Director, Albert Pick Center for Music Engineering 08/15*

*Director, Music Engineering Program 09/08 – 09/15*

- Managed faculty, staff, and student workloads and curricula; advised students; established and managed numerous annual budgets; established and maintained contacts within the audio industry; managed \$2m in construction projects; co-managed multiple grants in excess of \$1.3m; recruited faculty, staff, postdocs, and undergraduate/graduate students; oversaw graduate student theses; modernized the Music Engineering curriculum; created a draft PhD program; chaired several international conferences; authored papers and a textbook; co-authored four invention disclosures; currently in process of securing a \$2m named professorship endowment.
- Taught courses at the graduate and undergraduate levels in Transducer Theory, Acoustics/Psychoaoustics, Loudspeaker and Microphone Design, 3D Audio, Analog Audio, Circuit Bending & Alternate Controllers, Digital Audio, Audio Analysis and Synthesis, Human-Computer Interaction, Digital Signal Processing, Computational Acoustic Ecology, Acoustic Ecology of the Galápagos Islands, and Advanced Digital Audio.
- Awarded the University's Philip Frost Award for Teaching and Research in 2014.

*Acting Director, Music Engineering Program 09/09 – 08/10*

*Assistant Professor of Music Engineering 09/02 – 09/08*

### COLBY LEIDER + ASSOCIATES / LEIDERACOUSTICS :: CORAL GABLES, FL

*Principal 01/06 – Present*

- Assist a variety of clients, including prestigious law firms, audio companies, retail establishments, and private individuals with a number of audio-related projects. Major work includes noise abatement, audio programing and electronics design, test and measurement, audio forensics, architectural acoustics consulting, and legal expert witnessing.

### EVERGLADE RECORDS, INC :: CORAL GABLES, FL

*President and Co-Founder 01/08 – Present*

- Cultivate music recording projects for release on a variety of media formats in high-definition surround sound. Oversee mastering, design, authoring, production, replication, and distribution.

### PERSONICS :: BOCA RATON, FL

*Consultant and Engineer 01/05 – 01/07*

- Terms protected by NDA

### UMIXX :: PRINCETON, NJ

*Software Engineer 07/01 – 07/02*

- Developed and implemented various digital signal-processing algorithms in MATLAB and C++ for automatically tracking the tempo of digital audio signals.

#### COMPUTER MUSIC JOURNAL :: MIT PRESS :: CAMBRIDGE, MA

*Associate Editor* 07/00–07/11

*Assistant Editor* 02/99–07/00

- Edited and prepared articles for publication in one of the leading audio technology journals.

#### FLORIDA INTERNATIONAL UNIVERSITY :: MIAMI, FL

*Adjunct Instructor of Music* 09/01–05/02

- Taught courses at the graduate and undergraduate levels in Electronic Music, Music Theory, Sight Singing, Music Fundamentals, and MIDI Technology.

#### PRINCETON UNIVERSITY :: PRINCETON, NJ

*Preceptor in Computer Science and Music* 09/99–05/01

- Served as assistant to professors in computer science, music composition, and electronic music courses; led breakout class sessions and laboratory meetings.

#### APPLIED RESEARCH LABORATORIES :: AUSTIN, TX

*Laboratory Research Assistant* 08/95–08/96

*Laboratory Research Apprentice I–IV* Summers 1992–1995

- Aided in the design of a networked group-wide project management, reporting and tracking system for both financial resources and personnel. Implemented design as a management tool via a custom-built interface between the World Wide Web and an Oracle database backend.

## EDUCATION

#### PRINCETON UNIVERSITY :: PRINCETON, NJ

*PhD, Music Composition, emphasis in computer music and audio perception, 2007*

*MFA, Music Composition, emphasis in computer music and audio perception, 2002*

#### DARTMOUTH COLLEGE :: HANOVER, NH

*MA, Electro-Acoustic Music, 1998*

*Additional coursework in digital signal processing, computer science, and embedded systems programming*

#### THE UNIVERSITY OF TEXAS AT AUSTIN :: AUSTIN, TX

*BS Electrical Engineering, 1996*

*Emphases in Communications*

## SKILLS

Transducer theory, psychoacoustics, architectural acoustics, audio system design, project management, team-building, grant-writing, project planning, requirements engineering, noise abatement, audio forensics, digital signal processing, wireless technologies, cost management, audio synthesis and processing, human-computer interaction, usability engineering, software/hardware integration, listening-test design, music information retrieval, sensor technology, IoT, advanced technical writing and editing, human subjects research, embedded systems design, audio recording/editing/mixing/mastering, sound studio design, acoustic testing and analysis, MATLAB, Python, C/C++, Tcl/TK, SQL, Perl, Unix scripting.

## SELECTED PUBLICATIONS

- Geng, S., and C. Leider. 2015. “Single-Channel Sound Source Separation Using NMF with Sparseness Constraints.” Audio Engineering Society Convention 2015 e-Brief 231. New York: Audio Engineering Society.
- Ayers, A., R. Rehrig, C. Bennett, and C. Leider. 2013. “PsychoMasker: An iOS Application for the Visualization of PsychoAcoustic Principles.” Poster presented at the 135th Convention of the Audio Engineering Society, New York, 19 October.
- Ben-Asher, M., and C. Leider. 2013. “Toward an Emotionally Intelligent Piano: Real-Time Emotion Detection and Performer Feedback via Kinesthetic Sensing in Piano.” *Proceedings of the 2013 Conference on New Instruments for Musical Expression*. Seoul, Korea: Association for Computing Machinery.
- Klapuri, A., and C. Leider, eds. 2011. *Proceedings of the 2011 International Society for Music Information Retrieval Conference*. Coral Gables: University of Miami / ISMIR.