



Acoustics for Architects Seminar/Workshop - Cornell AAP-Department of Architecture
ARCH 4619/6605 Special Topics in Environmental Systems **Spring 2020**
Tuesday afternoons, 2:30-4:25 class size limited to 15 **261B East Sibley Hall**

This seminar will explore the sonic environment that we inhabit, especially the built environment, in order to become more familiar with the artistry/technology of sound, from noise to music. It is hoped that participating (architecture/design/arts & Sciences) students will come to consider the acoustic character of their work as important as that of light, form, color, structure, and acquire an abiding interest in “how spaces should sound.” The Cornell campus environment will be our laboratory. The seminar is organized into seven sections:

Listening, Hearing, Basic Principles, Analysis, Field Studies, Designing, Performance.

I. Listening: We will discuss the act of listening and undertake exercises on listening, which will involve field recording of sounds in and around Cornell/Ithaca, using Zoom H4N digital recorders. *In order to appreciate the absence of sound, the class will visit the acoustics lab/ anechoic chamber of Ron Miles at Binghamton University. After lunch at Audio Classics Inc, the class will visit audio component manufacturer McIntosh Labs to tour their manufacturing facility.*

II. Hearing: We will briefly review the biology of hearing/human hearing and introduce essential physical and psycho-acoustic principles. These two seminars, presented by Professor of Neurobiology and Behavior Ron Hoy, will explore how hearing is the foundation upon which humans become social beings.

III. Review of Basic Principles: We will take a sprint through the essentials of architectural acoustics with Professor of Mechanical Engineering Al George and acoustician Ben Markham.

IV. Analyses: We will review several formal acoustic analyses of campus spaces that have been prepared by acoustical consulting firms, and visit some of them. Assoc. University Architect Andrew Magre will join us in this discussion.

V. Field Studies: Using the campus as our laboratory, we will explore/tour a variety of campus sound spaces and places. Warren Cross, Resident Sound Designer for the Department of Theatre, Film and Dance, will introduce the essentials of acoustic analysis, and using available software/hardware, student teams will analyze the acoustic signature of selected spaces/places on campus. (such as Barton, Bailey, Statler, WSH Theater, Schoelkoph, The Slope, Sage Chapel, Sage Hall, various classrooms/seminar rooms Human Ecology classroom, Barnes, new Goldwin Smith addition, Klarman Hall, The Schwartz theater/black box theater, outdoor spaces, etc)

VI. Designing: Student teams will propose design solutions for campus spaces that will improve the acoustical character of the space/place they have chosen. Explore a variety of acoustic space types, in order to think about creating a lexicon of architectural sound spaces. Visiting acoustician, Ben Markham act as consultant/critic during this part of the class.

VII. Performance:

Students will conclude the seminar by participating in preparations for Slope Day, under the guidance of **Joe Scaffido**.

Various brief readings and online resources will be assigned on a weekly basis

The seminar will include several team projects and a final design project, and can be taken graded or pass/fail