

Synopsis of CDLTI workshop “Did You Hear What I Heard?”

The group adopted the name “Soundophiles” to simplify communications between the group. Our membership includes: Peter Crawford, Keith Farrington, Wally Herbranson, Kurt Hoffman, and Matthew Prull.

The Soundophiles devoted the spring semester of 2011 to an interdisciplinary exploration of music. We met throughout the spring semester which enabled us to follow topics of interest, adapt sequential presentations to group interests, and to adjust our schedule when necessary. The meeting schedule was as follows:

Meetings:

Jan. 21,	3:30–5 pm	Initial meeting
Jan. 28,	11 a.m.-12:30 p.m.	Peter C. leader
Feb. 4,	3:30–5 pm	Kurt H. leader
Feb. 11,	3:30-5 pm	Matt P. leader
Feb. 18,	3:30-5 pm	Wally H. leader
March 11,	11-12:30	Keith F. leader
March 11	4:00-5 pm	Summary of first half - Kurt
April 1	3:30-5	Discussion of Cook’s book - Peter
April 8	11-12:30	Wally – brain dissection
April 15	12-1	Discussion of Sacks’ book – Matt
May 27	9-10:30	Discussion of Wald’s book – Keith
May 27	10:30-12	Summary of semester outcomes – plan for future

The total meeting time of our group exceeded the 15 hour commitment made in our proposal.

In addition to sharing our personal expertise in music, primarily from our own disciplinary perspectives, we selected three books to read and discuss collectively. The books were selected from a larger list we generated at our first meeting:

- “Musicophilia: Tales of Music and the Brain”– Oliver Sacks
- “Music, Cognition, and Computerized Sound” - Perry R. Cook
- “How the Beatles Destroyed Rock n Roll” – Elijah Wald

The content of the three texts spanned all four disciplines represented in our group. As a result, the books worked effectively to spur discussion and create new linkages in our understanding of the material.

The individual workshop meetings generally revolved around a single member organizing an activity or discussion to focus our conversation. The initial round of meetings permitted each participant to present both a personal and a discipline-specific perspective on some aspect of music. Through these meetings we were able to better understand how each participant viewed the issue of music and how research related questions would be generated around the subject. Some of the sessions involved hands-on laboratory work which provided not only effective learning experiences, but also a broader awareness of how student centered learning is conceived in various disciplines. The last series of discussions were focused by texts that we agreed to read prior to the discussion. These events generated extensive conversation. In addition, we were able to make use of some of the many CDs and youtube clips demonstrating important concepts, as well as some simplified research examples. The circularity of the workshop structure enabled us to revisit topics of interest that were introduced the first time through our

individual presentations. We often were able to make firmer connection between ideas as we distilled the meanings of various demonstrations or theoretical definitions.

The benefit of the interdisciplinary nature of the workshop was most evident when our conversations turned to sharing ideas about approaches to experimentally exploring a topic. It seemed that each meeting produced potential research projects appropriate for a wide variety of disciplinary specialists. To that end, Kurt sponsored a student research project during the summer to create computer programs that would highlight some of the music concepts we discussed. Some of the group tested a few of the programs, and we collaborated to create a few more projects that would be of use for the Psychology faculty. The workshop was an effective venue for identifying areas of mutual interest and brainstorming possible collaborative projects.

Scope of our project:

Peter drew this picture on a chalk board at our end-of-the-semester meeting. We likely entered the workshop with a good sense of what the single arrows pointing out from the central question meant. The primary outcomes of the workshop are related to the double arrows connecting the disciplinary perspectives. There are more arrows that could have been drawn, and more to be identified as we continue to deepen our understanding of the interrelationships between these topics.



OUTCOMES: As part of our final meeting we created a list of potential future activities for our group. This list describes each action item and an outcome that would serve as a goal should all or some of us decide to pursue the activity.

1. Faculty forum to discuss our work – We were able to land the first time slot of the fall semester of 2011. We plan to summarize our work in a presentation titled: What is Music? We have drafted an outline of the presentation and will continue work on the presentation throughout the summer.
OUTCOME: faculty forum presentation
2. Team taught course – we discussed the pros and cons of a team taught course in terms of staffing, coordinating a course and the place of a course on this topic within the curriculum. We determined that the only way to really pursue this kind of course would be to do it without adding to current teaching loads. To do this we imagined a weekly seminar course that would be open only to senior students and/or to other students who are very interested in this topic and motivated to take this course. Each participating faculty member would lead two or three of the discussions over the course of the semester. The seminar format would permit a relatively small time investment by the faculty in terms of preparing materials for the course. In addition, the assessment workload for the course could also be kept manageable. OUTCOME: Plan a Seminar Course to integrate senior students with a diverse major representation.
3. Interdisciplinary Themes – We discussed possible other curricular applications of our workshop efforts. We discussed several possible ways to use our study for further curricular development. A possible effort might be to partner with other workshop groups to explore a future Encounters theme based in interdisciplinary units. Creating a theme for consideration in a few years would integrate the interdisciplinary workshops with a signature course of the College. The broad academic partnerships inherent in the workshops would ensure a course description more inclusive of disparate departmental perspectives in the Encounters course
A second focus of our conversation considered venues in which interdisciplinary program development is discussed. Our approach provided a framework within which substantive dialog ranged from comparing departmental perspectives to formulating novel research questions. The potential for substantive collaboration on curricular development and research programs should be emphasized. OUTCOME: A conversation between Workshop teams may be a first step.
4. Opportunities for publication and/or presentation to professional audiences – We devoted some time in our discussion to more formal mechanisms for summarizing our workshop results. Our options range from specialized conference presentations to the development of a book. The most promising venues for our work at this time are likely pedagogical presentations at conferences or manuscripts submitted to journals specializing in pedagogy. With the growing emphasis on interdisciplinary instruction and research, we will also explore conferences or journals that may be focusing on these issues. OUTCOME: We will begin looking at options for pedagogical talks as a venue for sharing our work.
5. A shorter-term goal that we considered a good opportunity to develop our ideas is to pursue participation in Alumni College courses and Alumni Relations activities associated with the Development Office. The Alumni College provides a forum in which faculty lead topical discussions on issues that are of personal or general interest. We have convinced ourselves that a general audience would be interested in music as an organizing theme around which we could build an effective conversation integrating the various departments represented in our workshop. A similar argument can be made in the development of presentations for alumni. Because our workshop focuses on a ubiquitous component of daily life, any public presentation will connect in some way to a diverse audience. As a marketing or development tool, the workshop connects well with the Mission of Whitman College. This project utilizes people's natural interest in music as a starting point to model multidisciplinary engagement. OUTCOME: We will be in contact with the relevant offices at Whitman to offer our ideas for participation in these programs.

Personal Responses to the Workshop.

Did you hear What I Heard? A CDLTI workshop report by Peter Crawford.

I approached this project without any expectations of what the outcome might be. I was aware of Kurt's class that is based on the physics of music, and I had some ideas that our classes may have some musical concepts in common and I assumed I would learn more about his class during this workshop. I knew that Keith had for many years been teaching a history of rock and roll class with David Schmitz. I did not know what involvement that Wally or Matt had in teaching classes with any musical content. I was totally surprised at the richness of the material that all the participants brought to our meetings. I was immediately able to use the concepts that were discussed in our meetings in my current classes and in planning for the next semester.

The readings that we did were very enlightening and took us in unexpected directions. Diana Duetch and her ideas on perception were of particular interest to me. Mathew Prull brought many ideas to light that I will use, in this regard. Keith and his concepts of why we like and dislike certain music we led to some very thoughtful discussions among the participants. Wally Hebranson and his presentation on brain structure worked well with our reading *Musicophilia* by Oliver Sacks. I was very impressed with the background and knowledge of all the participants, their commitment to the project and the exciting discussions that evolved during our meetings. I look forward to our upcoming faculty forum and also continuing to learn about concepts that I can use in my teaching and study. My time spent with these four Whitman professors certainly exceeded my expectations, and I will be able to utilize the resources that I collected over the semester to inform my teaching and advising.

Cross-Disciplinary Learning and Teaching Initiative Workshop Assessment
The Soundophiles: “Did You Hear What I Heard?”

Keith Farrington
Professor of Sociology
July, 2011

Please consider this to be my evaluative assessment of the “Did You Hear What I Heard?” Cross-Disciplinary Learning and Teaching Initiative Workshop in which I participated this past semester with Kurt Hoffman, Peter Crawford, Matt Prull and Wally Herbranson. By all evaluative measures that I can think of – both professionally and more personally – I found this workshop to be both informative, enjoyable and fulfilling, especially as it allowed me to fill in important gaps relating in various ways to the Sociology and History of Rock ‘n’ Roll class that I regularly teach at Whitman, either by myself or in conjunction with Professor Schmitz of the History Department.

I can begin by saying that, from the very beginning of my Workshop experiences, I viewed myself as something of a fish out of water both with regard to the strengths of and knowledge possessed by the other workshop participants, as well as the proposed vision and specific objectives of the workshop as these had already been tentatively conceptualized and developed by Kurt and the others. It wasn’t that I didn’t feel welcomed into the larger group – quite the contrary – but more that my own background (and specific interests) relating to music are clearly rooted in the social. That is to say, my workshop co-participants had great expertise in such relatively finite and empirically-grounded topics as the ways in which sound is generated, the ways in which sound is heard, and the ways in which sound is cognitively interpreted. All of these specific foci initially seemed to me to be quite far removed from my own understanding of the (admittedly somewhat less concrete) social, cultural and economic factors that lead some people to want to generate certain kinds of music at certain points in time, and that lead other people to react with enthusiasm (or the lack thereof) to various kinds of musical cultural production.

Despite these initial reservations on my part, it is definitely the case that this workshop experience did succeed in helping me to “draw meaningful and useful connections between apparently discrete domains of knowledge and experience” (to paraphrase the college’s Building on Excellence, 2010 document). Moreover, to quote this important college document once again, I found that my own sociological interest in the topics of sound and music are in fact rooted in “substantive issues, questions, and problems that cross established disciplinary lines.” These observations should not have been surprising to me when looked at in the context of the liberal arts education in which I have participated during the past 33 years, but I can say that it was definitely reaffirming in that regard (in addition to being personally gratifying) to make this discovery. And the fact that I was working with four such agreeable, talented and intelligent colleagues made the experience all the better.

As to specific ways in which participation in this workshop had seemed to encourage creative inquiry into the possibilities of cross-disciplinary teaching and learning, several very concrete possibilities became very apparent over the course of the semester. For example, we have already committed ourselves (in our collective Soundophile totality) to make a Faculty Forum presentation at the very beginning of the upcoming semester. In addition, we have talked in some detail about the possibility of offering some kind of seminar (most likely taught as an overload by all of us in light of current 3-2 teaching load pressures). And we have also talked about the possibilities of collaborating on some kind of multidisciplinary presentation to be made

before professional audiences, either at an appropriate conference or in print. Based upon our experiences of working together this past year, I would certainly welcome any opportunity to continue collaborating with any (or all) of these four individuals on any of these (or any additional) projects.

In addition to incorporating materials from this project into my own Sociology and History of Rock 'n' Roll class (e.g., issues relating to timbre, amplification and the possible evolutionary advantages of certain sounds), I also see direct applications to my Social Psychology class (thanks primarily to insights provided by Matt and Wally, as well as our reading of Oliver Sacks' fascinating book, Musicophilia: Tales of Music and the Brain).

I have had much of a positive nature to say about the pleasurable experience that I had sharing ideas and viewpoints about sound and music with my four workshop colleagues, but I would be remiss if I didn't also specifically call attention to the excellent leadership skills demonstrated by Kurt. From the earliest conceptualization of the project and his invitation to all of us to participate, Kurt did what was necessary to keep us engaged, on task and productively moving forward. And he did all of this in the most unassuming and collegial of ways. Kurt definitely deserves recognition for all of his "behind-the-scenes" work on our behalf.

Report from Wally Herbranson
CDLTI Workshop – Did you hear what I heard?

I found our CDLTI workshop to be fertile soil for thinking and asking questions. In fact, it was quite similar to my experiences in some of the upper-level graduate seminars that really turned me on to academics. I'm not sure how much of that to attribute to the workshop itself, and how much to the specific individuals who participated in the workshop (I suspect it was some of both). While most of us came to our sessions with prepared notes, we quickly deviated from any prepared plan based on the questions and conversations that emerged. Our commonalities allowed each of us to ask questions in ways that the others found compelling. At the same time, we were coming from backgrounds that were different enough (even between those of us affiliated with the same academic department) that most comments and contributions were novel and interesting to other members of the group.

Moving forward, my primary pedagogical goal is to incorporate some of what I learned in the workshop into Psyc 360 (Physiology of Behavior), a class that I teach regularly. For the last several years I have wanted to include a class session or two on the neuroscience of music. However, my rudimentary understanding of music prevented me from doing so. The workshop allowed me to fill in those gaps in my own knowledge base that I needed in order to present a coherent and complete depiction of the brain bases of music perception and performance. Based on the complexity of the topic, and the tendency of music to engage multiple areas of the brain, music is a topic that I think will be most appropriate at the end of the semester. I see it as a possible concluding topic that can be used to challenge students to integrate multiple themes from earlier in the semester, as well as to reach out and make connections between neuroscience and some of their other academic interests. Given the important role that music plays in the lives of most students, I suspect that it is one that will generate lasting excitement as the semester concludes. The class also has a weekly lab, and I have hopes of developing a parallel lab exercise that demonstrates some of the quirks of our auditory system that are related to the perception of music. With the newly renovated lab space in Maxey, this is a more realistic possibility than it had been in the past. I'm hoping to test some possibilities over the coming semesters (perhaps as classroom demonstrations). If they work, I will likely swap them in for one of my existing lab exercises.

Finally, the workshop has provided me with a framework for asking and seeking answers to questions about music within my field of Experimental Psychology. While I don't anticipate adopting music as my primary research interest, I do feel confident now delving into music as a researcher and research advisor to students. An important part of the Psychology major is the senior thesis, for which most students conduct a novel research project. Given the relatively broad framework that is now in place, I am more comfortable guiding students and encouraging them to explore the psychology of music as a research topic. I even have a few pragmatic lines of research in mind (the result of some of our workshop conversations), should students show interest.

Report from Kurt Hoffman
CDLTI Workshop – Did you hear what I heard?

The workshop entitled “Did You Hear What I Heard?” exceeded my expectations in several outcome measures. First, I appreciated the commitment to the enterprise demonstrated by each of the participants. While I knew they were all serious academics, I wasn’t sure if this potentially peripheral subject matter would engage all group members throughout a hectic semester. Second, I found myself quickly adopting some of the research ideas that people brought to our discussions into my acoustics course. Most notably, this workshop gave me permission to broaden the scope of ideas that I was willing to let students pursue in research and writing activities. Third, I found our discussions often led to creative brainstorming sessions about how we might design an experiment to measure variations of examples we listened to as a group. The collective problem solving and experimental design was totally unexpected on my part. Finally, I thoroughly enjoyed establishing deeper relationships with five faculty who were previously less well known to me.

Our workshop provided many opportunities for creative inquiry. On an individual level the use of three books for a basis of ongoing discussion permitted me to incorporate the ideas of the texts into my broader paradigm for understanding music. None of the texts was a physics focused text so I enjoyed the varied perspectives on the topic of music presented in these works. In addition, I found leading a group activity to be really challenging in exciting ways. My colleagues were quick to ask questions and pressed me on many basic aspects of the exercises I had them work through. The key insight I had during my presentation was that just trying to simplify the explanation of the physics wasn’t really thinking about the task in the proper way. What really helped was finding commonalities in understanding and then broadening the experience to bring in new ideas. Here vocabulary and disciplinary viewpoints were quite apparent. The last point relating to creative inquiry was alluded to above in that we often spent some of our time thinking about how we could test ideas. I was very excited to hear my colleagues start to express strategies for exploring ideas generated by our conversations about music. For example, in our discussion of acoustical illusions as presented in recordings by Diana Deutsch, we started developing variations of the example that could be testable in some manner. Soon we were identifying questions and proposing possible solutions to these questions.

There are a variety of ways I have already incorporated activities related to this workshop into my teaching. The most obvious impact was on the course “Sound and Music” that I taught concurrently with the workshop meetings. In my class I utilized several of the demonstration audio clips that were included with one of our workshop reading texts. In the context of this program, the more important contribution to my class was the ability to speak knowledgeably about where different disciplines made contributions to the content of the course. For example, my understanding of several perceptual issues addressed in class is based on psychological research. More importantly, for students interested in these questions I was better equipped to steer them toward the proper individuals on campus who might be best suited to help them should they choose to pursue the topic. I am most excited about the ongoing work of this workshop group as we plan to do further work in this area in the coming months and years. For example, I have a student at Whitman this summer writing programs to create computer based activities for my acoustics class. The workshop participants will meet with my student this

summer to discuss possible uses of these tools in classroom demonstrations or potential student thesis work in departments such as Psychology or Music. So not only has this workshop impacted my teaching, it is also moving into student collaborative research. Should my student wish to pursue this line of work, we may even develop a thesis project for next year.

Summary of the Soundphonics Interdisciplinary Workshop

Matthew W. Prull

July 25, 2011

The topic/theme that we addressed was how the nature of sound is understood and studied in terms of its physical properties (physics; Kurt Hoffman), its perception, interpretation, and neural representation by humans and non-human animals (psychology; Matthew Prull and Wally Herbranson), its organization into musical forms (music; Pete Crawford), and the use and relevance of those musical forms to social groups (sociology; Keith Farrington). The workshop was composed of group meetings and discussions that focused on exploring and learning about sound and music from a particular discipline. One or two of the group members led each workshop.

Our first round of meetings allowed us to sample how different academic disciplines studied sound and music; these meetings thus served as opportunities to enter each other's academic spaces. Sometimes the group meetings involved hands-on exercises such as computer recording of sound and the analysis of speech and sound in terms of harmonic structure, timbre, harmony, dissonance, resonance, counterpoint, and the like. On other occasions the group meetings were comprised of book or article discussions, audio demonstrations, videos, or listening exercises. After each group member led one meeting, a second round of meetings commenced in which each group member built upon the concepts, principles, or theories presented in the first round, often reacting to another group member's presentation. In nearly all cases we read short articles, book chapters, or entire books as background or preparation for the upcoming meeting. The articles were selections from *Scientific American*, the books were *Musicophilia* (Oliver Sacks), *Music, Cognition, and Computerized Sound* (Cook, ed.), and *How the Beatles Destroyed Rock 'n' Roll* (Wald).

Although I cannot speak for other members of the group, what I learned from this workshop is a much deeper understanding of the physical nature of sound and how the physical properties of sound are translated by the perceiver into organized patterns such as music. Particularly valuable were the workshops that allowed us to examine the spectral properties of sound and understand better how different sounds are a function of different physical properties of the sound wave. As well, our perception of harmony or dissonance, or whether music is regarded as pleasing or displeasing, can also be understood in terms of the mathematic properties within and between sound waves. Thus, I gained a richer understanding of the interrelationships between the physical, psychological, and aesthetic properties of music, and the understanding that I gained can be utilized in my teaching of the perception of sound in my *Introductory Psychology* and *Cognitive Psychology* courses. Specifically, I plan to incorporate many of the audio and video examples of various concepts, as well as some of the software packages available for recording, manipulating, and analyzing sound, into those courses either as hands-on exercises or labs, or as in-class demonstrations. As well, at our final meeting we identified several possible directions to pursue in the future, ranging from a Faculty Forum presentation to an interdisciplinary course on sound and music, the instructors of which would involve some or all of the workshop members.

While the benefits of this workshop are immediate and tangible in terms of teaching, and while many of our discussions produced excellent questions that could form research projects of various kinds, I believe these workshops could be improved by requesting specifying tangible and realistic goals prior to the first meeting. The presenters in this workshop were always prepared, the individual group meetings were always well organized, and I truly valued my time and learned much in this workshop, but the broader organizational picture of the workshop was not always clear and we often found ourselves trying to develop and re-develop plans and goals in mid-stream. This on-the-fly development of the workshop took time that I thought could be better spent pursuing a clearly defined end point. The lack of focus was likely a product of the overly broad and vague goal of these workshops, which is to “[encourage] creative inquiry into the possibilities of cross-disciplinary teaching and learning.” Although we succeeded in creating an environment conducive to exploring different disciplines and discussing interdisciplinary teaching possibilities with respect to sound and music, I believe the workshops could be improved further by establishing a system similar to what professors do when they apply for sabbatical leave: State specific and tangible goals that define whether a workshop succeeds or fails. I believe that specifying such goals would assist in the larger structure and organization of workshop meetings.