#### IRB Synopsis of Proposal

**Title: The Effects of Practice Content on Musicians' Learning of a Keyboard Melody**

1. Identify the sources of the potential subjects, derived materials or data. Describe the characteristics of the subject population, such as their anticipated number, age, sex, ethnic background, and state of health. Identify the criteria for inclusion or exclusion. Explain the rationale for the use of special classes of subjects, such as fetuses, pregnant women, children, institutionalized mentally disabled, prisoners, or others, especially those whose ability to give voluntary informed consent may be in question.

**Participants will include 100 undergraduate and graduate music majors at Texas State University. All participants will be right-handed, will be between the ages of 18 and 50, and will have completed 1-4 semesters of group piano instruction at the university level. They will agree to refrain from consuming mind-altering substances (e.g., alcoholic beverages, non-prescription drugs, drugs that are not sold over-the-counter) and will agree to consume only the amount of caffeine that is typical for them (if any) for 12 hours prior to and for the duration of the experiment. The rationale for the inclusion of only right-handed people is that the experimental task requires participants to perform a bass-clef piano melody with their left hand; including left-handed people in the study may likely introduce considerable between-subject variance.**

1. Describe the procedures for recruitment of subjects and the consent procedures to be followed. Include the circumstances under which consent will be solicited and obtained, who will seek it, the nature of information to be provided to prospective subjects, and the methods of documenting consent. (Include applicable consent form(s) for review.) If written consent is not to be obtained, this should be clearly stated and justified.

**Participants will be selected on a volunteer basis. All volunteers must be a registered music major at UTSA. I will visit music classrooms at the end of their meeting time (verbal consent of the instructors will be obtained in advance). Just before students leave, I will make a brief announcement about my study (attached) and will speak to interested students about scheduling a meeting after their general dismissal from class.**

**When participants meet with me (individually) for their first session, they will review the information on the consent form (paper version), during which time they may ask me any questions they may have. I will then give them the opportunity to sign the form or to opt out of participation. Those that wish to continue will sign the form before they begin participation in any part of the study.**

**The consent form (attached) will provide the following information to potential participants: 1) Participants will learn a 13-note melody on a digital keyboard in a training session, 2) They will return 12 and 24 hours later to perform a brief recall of the same melody in the final two sessions, and 3) Sessions will be scheduled so that one group will sleep between sessions 1 and 2; the other group will sleep between sessions 2 and 3. Participants will be randomly assigned to groups.**

1. Describe the project’s methodology in detail. If applicable, detail the data collection procedures, the testing instruments, the intervention(s), etc. If using a survey, questionnaire, or interview, please provide a copy of the items or questions.

**Right-handed nonpianists (*N* = 100) will learn a 13-note piano melody with their non-dominant hand in three individual sessions, scheduled approximately 12 hr apart. Sessions will be scheduled so that one group will sleep between sessions 1 and 2; the other group will sleep between sessions 2 and 3. All sessions will be videotaped for content analysis purposes.**

**In the first session, subjects will sit at a digital piano, with sheet music displaying the melody in front of them. After a brief orientation to the task, participants will complete a brief pretest, performing the melody five times (beginning to end), with the stated goal to play “as quickly as possible,” pausing briefly between each performance trial. Following the pretest, participants will practice the melody for three 90-second blocks of unrestricted, self-regulated practice. After each of the three practice blocks, participants will again perform the melody five times just as they did in the pretest. Approximately 12 hr later, and again 24 hr later, participants will return for two brief retests, comprised of two reorientation trials and one test block of 5 trials (performed identically to the test blocks in the first session).**

**MIDI data for all practice and test blocks will be recorded using Logic Studio software on a MacBook Pro computer that will be connected to the digital keyboard via USB MIDI interface. MIDI data from the four test blocks will be analyzed for accuracy (number of errors per sequence), speed (mean duration per sequence, in milliseconds), temporal evenness (the standard deviation of the inter-onset intervals between successive notes in each trial), and evenness of sound (the standard deviation of the differences in keystroke velocity between successive notes in each trial). I will compare participants’ performances across test blocks to assess possible effects of wake- and sleep-based memory consolidation (the off-line neural process known to affect the way memories are stored and recalled) on retest performance when practice is unrestricted and completely self-regulated. The videotaped performances of the three 90-sec practice blocks will be analyzed for practice content.**

**Please find attached the questionnaire I will use.**

1. Describe any potential risks — physical, psychological, social, legal or other — and state their likelihood and seriousness. Describe alternative methods, if any, that were considered and why they will not be used.

**There are no identifiable risks for those who volunteer to participate. The likelihood and seriousness of potential risks are no greater than those encountered as a part of every day life.**

1. Describe the procedures for protecting against or minimizing any potential risks and include an assessment of the likely effectiveness of those procedures. Include a discussion of confidentiality safeguards, where relevant, and arrangements for providing mental health or medical treatment, if needed.

**Sessions will occur in the music building at Texas State University. This location is well known to music majors, who are typically there every day. As participants are likely to be in the building already, travel risks are minimized.**

**Data will be coded so that no personal information is visible anywhere other than on the questionnaire and in their videotaped performances. Data will be and collected and saved on my computer and will only be reviewed for research purposes by me. Questionnaires and videotapes will be locked in a secure area in the principal investigator’s office, and will be destroyed by me once the study is complete.**

1. Describe and assess the potential benefits to be gained by the subjects, as well as the benefits that may accrue to society in general as a result of the proposed study.

**Countless hours of musicians’ lives are devoted to individual practice, the process through which motor skills are learned, encoded, and refined. Success in music performance largely depends on the development of effective practice techniques that lead to fluent performance. My line of research is designed to encourage the reexamination of music learning procedures by synthesizing information from music pedagogy, cognitive science, and neuroscience, and to provide a clearer picture of how our current knowledge can inform intelligent music practice.**

1. Clearly describe any compensation to be offered/provided to the participants. If extra credit is provided as an incentive, include the percentage of extra credit in relation to the total points offered in the class. Also, if extra credit is provided, describe alternatives to participation in your research for earning extra credit.

**Participants will receive a $10 iTunes gift card.**

1. Discuss the risks in relation to the anticipated benefits to the subjects and society.

**As I cannot identify risks associated with participation, I anticipate that participants and scholars will benefit from developing a deeper understanding of human motor learning.**

1. Identify the specific sites/agencies to be used as well as approval status. Include copies of approval letters from agencies to be used (note: these are required for final approval). If they are not available at the time of IRB review, approval of the proposal will be contingent upon their receipt.

**All session meetings will occur in the Music Building at Texas State University, in room 130. The room is large enough to house my research equipment, and is larger than the practice rooms typically occupied by students practicing on school-owned pianos. No approval is required to use the space.**

1. If you are a student, indicate the relationship of the proposal to your program of work and identify your supervising/sponsor faculty member.

**I am an assistant professor on the tenure-track.**

1. In the case of student projects, pilot studies, theses, or dissertations, evidence of approval of Supervising Professor or Faculty Sponsor should be included. Thesis and dissertation proposals must be approved by the student’s committee before proceeding to the IRB for review.

**Not applicable.**

1. If the proposed study has been approved by another IRB, attach a copy of the letter verifying approval/disapproval and any related correspondence. If the proposed study has not been reviewed/approved by another IRB, please state this explicitly.

**Not applicable.**

1. Identify all individuals who will have access, during or after completion, to the results of this study, whether they be published or unpublished.

**These results will be available to all participants via email (if they so desire) and to the international music education community once published.**

In addition to this synopsis, you are required to submit all relevant documentation for review. This may include, but is not necessarily limited to: 1) recruiting documents (e.g., flyers, letter, e-mails, brochures, etc.), 2) a consent form, 3) an assent form, 4) letters of approval from relevant organization(s), 5) surveys/instruments/questionnaires, esp. those created by the researcher, 6) a list of questions that the researcher may ask (e.g., focus groups questions, questions for qualitative studies, etc.), and 7) all documents in translated versions.