Introduction
The School of Music, as required by the National Association of Schools of Music, is obligated to inform students and faculty of health and safety issues, hazards, and procedures inherent in practice, performance, teaching, and listening both in general and as applicable to their specific specializations. This includes but is not limited to information regarding hearing, vocal and musculoskeletal health, injury prevention, and the use, proper handling, and operation of potentially dangerous materials, equipment, and technology.

It is important to note that health and safety depends largely on personal decisions made by informed individuals. Butler University has health and safety responsibilities, but fulfillment of these responsibilities cannot and will not ensure any individual's health and safety. Too many factors beyond the university's control are involved.

Each individual is personally responsible for avoiding risk and preventing injuries to themselves before, during, and after study or employment in the Butler University School of Music. The policies, protocols, and operational procedures developed by the School of Music do not alter or cancel any individual's personal responsibility, or in any way shift personal responsibility for the results of any individual's personal decisions or actions in any instance or over time to the University.

Performance Injuries
Anyone who practices, rehearses or performs instrumental or vocal music has the potential to suffer injury related to that activity. Instrumental musicians are at risk for repetitive motion injuries. Sizable percentages of them develop physical problems related to playing their instruments; and if they are also computer users, their risks are compounded. Instrumental injuries often include carpal tunnel syndrome, tendinitis, and bursitis. Incorrect posture, non-ergonomic technique, excessive force, overuse, stress, and insufficient rest contribute to chronic injuries that can cause great pain, disability, and the end of careers.

What Instrumentalists Should Do
The School of Music wishes to thank the Associated Board of the Royal Schools of Music and the Canadian Network for Health in the Arts for the following information:

1. **Evaluate your technique**. Reduce force, keep joints in the middle of their range of motion, use large muscle groups when possible, and avoid fixed, tense positions.
2. **Always warm up**. As an athlete would not begin a vigorous physical activity without warming up, a musician must warm up carefully before practice or performance.
3. **Take breaks to stretch and relax**. Take short breaks every few minutes and longer breaks each hour. Two or more shorter rehearsals each day are more productive than marathon single sessions. Even in performance, find those opportunities to relax a hand, arm, or embouchure to restore circulation.
4. **Pace yourself**. No pain, no gain is a potentially catastrophic philosophy for a musician. Know when enough is enough, and learn to say 'no' to certain performances or lengths of performing that might result in injury.
5. **Check out your instrument**. Does your instrument place undue stress on your body? Is your instrument set up optimally for you to relieve pressure on hands, joints, etc.? Is there a strap, carrier, or stand available to relieve the stress?
6. **Evaluate other activities**. Pains and injuries affecting your music making could be caused by other activities in your daily life. Computer use is notorious for causing afflictions including carpal tunnel syndrome and tendinitis.
7. **Pay attention to your body**. Pain is the mechanism by which your body tells you that something is wrong. Listen to your body; if it hurts, stop what you are doing.
8. **Get medical attention**. Do not delay in seeing a doctor. A physician may prescribe a minor adjustment or, in worst-case scenarios, stipulate not performing for a period of time. As drastic as this may sound, a few months of rest is better than suffering a permanent, career ending injury. Likewise, the demands placed on singers' voices are immense. Hardly a month goes by where a top singer is not forced to interrupt a tour, take a break, or undergo a medical procedure due to problems with their voice. Medical professionals are making the case that the demands put on one's voice when singing one to three hours is as intense as those made on an Olympic

marathon runner's body. Additional factors such as nutrition, smoking, drug use, noisy environments, and proper voice training (or the lack of it) all play a role in a singer's ability to perform at her/his best.

What Singers Should Do

The School of Music wishes to thank The Singer's Resource, the Texas Voice Center, Houston, and the University of Michigan Vocal Health Center for the following information:

1. **Maintain good general health**. Get adequate rest to minimize fatigue. If you do become ill, avoid "talking over your laryngitis" - see your physician and rest your voice.
2. **Exercise regularly**.
3. **Eat a balanced diet**. Including vegetables, fruit and whole grains, and avoid caffeinated drinks (coffee, tea, and soft drinks) and alcohol. Avoid spicy, acidic, and dairy foods if you are sensitive to them.
4. **Maintain body hydration**; drink two quarts of water daily.
5. **Avoid dry, artificial interior climates**. Las Vegas has an average daily humidity of 36%, a relatively low amount of moisture. Using a humidifier at night might compensate for the dryness.
6. **Limit the use of your voice**. High-ceilinged restaurants, noisy parties, cars and planes are especially damaging to the voice. If necessary, use amplification for vocal projection.
7. **Avoid throat clearing and voiced coughing**.
8. **Stop yelling, and avoid hard vocal attacks on initial vowel words**.
9. **Adjust the speaking pitch level of your voice**. Use the pitch level in the same range where you say, "Umm-hmm?"
10. **Speak in phrases rather than in paragraphs**. Breath slightly before each phrase.
11. **Reduce demands on your voice** - don't do all the talking!
12. **Learn to breathe silently to activate your breath support muscles and reduce neck tension.**
13. **Take full advantage of the two free elements of vocal fold healing**: water and air.
14. **Vocal athletes must treat their musculoskeletal system as do other types of athletes;** therefore, vocal warm-ups should always be used prior to singing. Vocal cool-downs are also essential to keep the singing voice healthy.

Stay informed. Awareness is the key. Like many health-related issues, prevention is much easier and less expensive than cures. Take time to read available information concerning injuries associated with your art.

Musicians might find the following books helpful:

Conable, Barbara. *What Every Musicians Needs to Know About the Body* (GIA Publications, 2000)
Klickstein, Gerald. *The Musician's Way: A Guide to Practice, Performance, and Wellness* (Oxford, 2009)
Norris, Richard N. *The Musician's Survival Manual* (International Conference of Symphony and Opera Musicians, 1993)

The following links may be useful:

- Associated Board of the Royal Schools of Music (ABRSM), the world's leading authority on musical assessment, actively supporting and encouraging music learning for all. http://us.abrsm.org/en/home
- Performing Arts Medicine Association (PAMA), an organization comprised of dedicated medical professionals, artists educators, and administrators with the common goal of improving the health care of the performing artist. http://www.artsmed.org
- Texas Voice Center, founded in 1989 for the diagnosis, treatment, and prevention of voice disorders. http://www.texasvoicecenter.com
- National Center for Voice and Speech (NCVS), conducts research, educates vocologists, and disseminates information about voice and speech. http://www.ncvs.org

- Vocal Health Center, University of Michigan Health System, recognized locally, regionally and nationally as a leading institution for the treatment and prevention of voice disorders. At the heart of the Center is a professional team comprised of experts from the University of Michigan Health System and U-M School of Music, encompassing the fields of Laryngology, Speech Pathology, and Vocal Arts. http://www.med.umich.edu

School-Owned Instruments
The School of Music maintains a collection of musical instruments for checkout and use by members of the music faculty and students enrolled in our courses and performing ensembles. As with other items we use in the course of our daily lives, musical instruments must be cared for properly and cleaned regularly. Each instrument in the School's collection receives a thorough inspection at the conclusion of the academic year. Every year, thousands of dollars are spent to clean, adjust, and return instruments to full playing condition.

Antiseptically Clean
More and more our society is pushing for products that are anti-fungal, anti-bacterial and anti-viral. Some even go the next step further aiming to achieve sterile. However, our bodies by design are not meant to live in a sterile environment. As kids we played in the dirt, ate bugs and countless other things and became stronger because of it. Keep in mind that total sterility is a fleeting moment. Once a sterile instrument has been handled or exposed to room air it is no longer considered to be sterile. It will however remain antiseptically clean until used.

Most viruses cannot live on hard surfaces for a prolonged period of time. Some die simply with exposure to air. However, certain groups are quite hardy. Therefore, musicians must be concerned with instrument hygiene. Users of school owned and rented musical equipment might be more susceptible to infections from instruments that are not cleaned and maintained properly.

If the cleaning process is thorough, however, musical instruments will be antiseptically clean. Just as with the utensils you eat with, soap and water can clean off anything harmful. Antibacterial soaps will kill certain germs but all soaps will carry away the germs that stick to dirt and oils while they clean. No germs/ no threat.

Noise-Induced Hearing Loss
Note - *The information in this document is generic and advisory in nature. It is not a substitute for professional, medical judgments. It should not be used as a basis for medical treatment. If you are concerned about your hearing or think you may have suffered hearing loss, consult a licensed medical professional.*

Part of the role of any professional is to remain in the best condition to practice the profession. As an aspiring musician, this involves safeguarding your hearing health. Whatever your plans after graduation - whether they involve playing, teaching, engineering, or simply enjoying music - you owe it to yourself and your fellow musicians to do all you can to protect your hearing. If you are serious about pursuing a career in music, you need to protect your hearing. The way you hear music, the way you recognize and differentiate pitch, the way you play music; all are directly connected to your hearing.

Music & Noise In the scientific world, all types of sound, including music, are regularly categorized as noise. A sound that it too loud, or too loud for too long, is dangerous to hearing health, no matter what kind of sound it is or whether we call it noise, music, or something else. Music itself is not the issue. Loudness and its duration are the issues. Music plays an important part in hearing health, but hearing health is far larger than music.

Noise-Induced Hearing Loss (NIHL)
We experience sound in our environment, such as the sounds from television and radio, household appliances, and traffic. Normally, we hear these sounds at safe levels that do not affect our hearing. However, when we are exposed to harmful noise-sounds that are too loud or loud sounds that last a long time-sensitive structures in our inner ear can be damaged,

causing noise-induced hearing loss (NIHL). These sensitive structures, called hair cells, are small sensory cells that convert sound energy into electrical signals that travel to the brain. Once damaged, our hair cells cannot grow back. NIHL can be caused by a one-time exposure to an intense "impulse" sound, such as an explosion, or by continuous exposure to loud sounds over an extended period of time. The humming of a refrigerator is 45 decibels, normal conversation is approximately 60 decibels, and the noise from heavy city traffic can reach 85 decibels. Sources of noise that can cause NIHL include motorcycles, firecrackers, and small firearms, all emitting sounds from 120 to 150 decibels. Long or repeated exposure to sounds at or above 85 decibels can cause hearing loss. The louder the sound, the shorter the time period before NIHL can occur. Sounds of less than 75 decibels, even after long exposure, are unlikely to cause hearing loss. Although being aware of decibel levels is an important factor in protecting one's hearing, distance from the source of the sound and duration of exposure to the sound are equally important. A good rule of thumb is to avoid noises that are "too loud" and "too close" or that last "too long."

It is very important to understand that the hair cells in your inner ear cannot regenerate. Damage done to them is permanent. There is no way to repair or undo this damage.

According to the American Academy of Audiology, approximately 26 million Americans have hearing loss. One in three developed their hearing loss as a result of exposure to noise. As you pursue your day-to-day activities, both in the Department of Music and in other educational, vocational, and recreational environments, remember:

1. Hearing health is essential to your lifelong success as a musician.
2. Your hearing can be permanently damaged by loud sounds, including music. Technically, this is called Noise-Induced Hearing Loss (NIHL). This danger is constant.
3. Noise-induced hearing loss is generally preventable. You must avoid overexposure to loud sounds, especially for long periods of time.
4. The closer you are to the source of a loud sound, the greater the risk of damage.
5. Sounds over 85 dB (your typical vacuum cleaner) in intensity pose the greatest risk to your hearing.
6. Recommended maximum daily exposure times to sounds at or above 85 dB are as follows: 85 dB (vacuum cleaner, MP3 player at 1/3 volume) - 8 hours 90 dB (blender, hair dryer) - 2 hours 94 dB (MP3 player at 1/2 volume) - 1 hour 100 dB (MP3 player at full volume, lawnmower) - 15 minutes 110 dB (rock concert, power tools) - 2 minutes 120 dB (jet planes at take-off) - without ear protection, sound damage is almost immediate
7. Certain behaviors (controlling volume levels in practice and rehearsal, planning rehearsal order to provide relief from high volume works, avoiding noisy environments) reduce your risk of hearing loss.
8. The use of earplugs (Sensaphonics, ProGuard, Sensorcom) helps to protect your hearing health.
9. Day-to-day decisions can impact your hearing health, both now and in the future. Since sound exposure occurs in and out of the Department of Music, you also need to learn more and take care of your own hearing health on a daily, even hourly basis.
10. If you are concerned about your personal hearing health, talk with a medical professional.
11. If you are concerned about your hearing health in relationship to your study of music at UNLV, consult with your applied instructor, ensemble conductor, advisor, or Department Chair.

Resources - Information and Research Hearing Health Project Partners
National Association of School of Music (NASM) http://nasm.arts-accredit.org/
Performing Arts Medicine Association (PAMA) http://www.artsmed.org/index.html
PAMA Bibliography (search tool) http://www.artsmed.org/bibliography.html

General Information on Acoustics
Acoustical Society of America (http://acousticalsociety.org/)
Acoustics.com (http://www.acoustics.com)
Acoustics for Performance, Rehearsal, and Practice Facilities Available through the NASM Web site

Health and Safety Standards Organizations American National Standards Institute (ANSI) (http://www.ansi.org/)
The National Institute for Occupational Safety and Health (NIOSH) (http://www.cdc.gov/niosh/)
Occupational Safety and Health Administration (OSHA) (http://www.osha.gov/)
Medical Organizations Focused on Hearing Health American Academy of Audiology
(http://www.audiology.org/Pages/default.aspx)
American Academy of Otolaryngology â€" Head and Neck Surgery (http://www.entnet.org/index.cfm)
American Speech-Language-Hearing Association (ASHA) (http://www.asha.org/)
Athletes and the Arts (http://athletesandthearts.com/)
Other Organizations Focused on Hearing Health Dangerous Decibels (http://www.dangerousdecibels.org)
National Hearing Conservation Association (http://www.hearingconservation.org/)