

"Plan For the Worst" – Version 2
Ensemble Delivery Ideas for 2020/21

Advocacy, Scenarios, Contingency Plans, Health & Safety, Technological Support

The document that was prepared on May 6 is updated, to include input from orchestral colleagues and meetings in the past week. Thanks to Kira Omelchenko (Wilfrid Laurier University), Rachell Waddel-Richards (University of Rochester), Lucy Lewis (California State University, San Bernardino), Colleen Ferguson (Texas A&M, Kinsville), Hyeyoun Jang (College of Saint Benedict and Saint John's University) for sharing their ideas with us. Their ideas have been added to relevant sections and Appendices C, D, and E include more specific ideas and information.

The following is an amalgamation of ideas from hundreds of university/college conductors of large ensembles from Canada and the U.S. This information is largely focused toward Wind Ensembles, but there has been input from conductors of choirs and orchestras with concerns that pertain to everyone. It is simply an organization of brainstorming meetings to date. Not all applies to everyone and some not to anyone. Take from it what you can. It is all in the spirit of professionals coming together to solve the problem of remote instruction in several "scenarios." I have deleted specific conversations about Athletic and Marching Bands, as that platform has a very strong network that can be tapped into by those who have interest in these areas.

(J.V.K. – May 12 ,2020)

ADVOCACY STATEMENT

If administration needs to understand the importance of in-person delivery of and the problematic nature of providing large ensembles during the Covid-19 pandemic, the following points might help to fuel an advocacy statement, to clarify understanding, in favour of continuing this platform for our music students. These advocacy points support the importance of continuing instruction for large music ensembles, for pedagogical, practical, and public-relations reasons. It has been offered as a starting point toward developing an advocacy statement that fits your situation ...

- The very nature of collaborative music ensemble education is predicated on real-time, in-person instruction and rehearsal. This is a critical part of the musical experience, where each individual must learn to react and respond to each other, and this organic musical conversation cannot be meaningfully replicated in online instruction.
- Our ensembles are some of the largest and most visible student groups on our campus, and are vital to campus life and public image. We allow for a wide range of positive media engagements, public relations efforts, and the like.
- Our ensembles are an important and powerful tool for both student recruitment and retention for the university.
- Our ensembles reach students from most every major across the campus. Literally hundreds of students satisfy their Arts Diversification through our ensembles every semester.
- Our ensembles engage with our community in important and meaningful ways. Whether through active participation in our music ensembles, attendance at our events, attract financial support, and engage our community.

We are developing contingency plans to accommodate social distancing guidelines, enrollment caps, and/or prohibitions on public concerts. While our large music ensemble students depend on and get the best instruction with real-time, in-person rehearsal and collaboration, we are striving to adapt our ensembles to function in a variety of scenarios.

HEALTH & SAFETY

The first priority for all is to consider health and safety of our students and conductors. In that light, there is some information about safety, with regard to instruments that are borrowed/rented or played by more than one person at the end of this document. For Cleaning/Disinfecting Protocols, see Appendix A.

Concerning factors for in-person instruction:

- Support for PPE, acrylic shields, masks, gloves, etc.
- Room size as accommodation factor for physical distancing
 - Alternate rehearsal spaces (conference rooms, gyms, ballrooms, auditorium, etc.)
- Wind musicians playing with masks on!!
- Cleaning facilities and shared equipment (percussion/keyboards, etc.)
- Air quality
 - The CBDNA Covid-19 Response Committee is doing a study on air quality in rehearsal rooms, with regard to safety of shared air, as groups breathe in and out for periods of time
 - How much aerosol is released into the air when playing the flute, trumpet, tuba?
 - Are 6 feet of physical distance enough?
 - How long will aerosols linger in the air?
 - What can we do to remediate the situation?
 - How can we get back to making live music a.s.a.p.?

TECHNOLOGICAL SUPPORT

One of the most critical barriers to successful delivery of the ensemble experience for our students is technology and equipment, to make virtual delivery possible and provide a meaningful experience. For a list of options and ideas, see Appendix B.

SCENARIOS/CONTINGENCY PLANS

Scenario 1: In-person instruction with course enrollment limited to 50... or 20... or 10

- Advocacy - importance of maintaining ensembles
 - Collaborative, real-time nature of ensemble learning/instruction
- Expand course/section offerings (depending on enrollment)
- Adapt student learning outcomes/best pedagogical practices
- Rehearse by section, separated by date or time - staggered/modular rehearsals
- Adapt literature/curriculum to smaller group/chamber
- Mixed chamber groups: winds, strings, and voice
 - Including other ensembles (e.g., orch, etc.) - moving beyond traditional ensemble demarcations/divisions

- Student compositions/arrangements for chamber groups
- Professional New Music Ensembles (for programming ideas)
- Wind and Brass Players: Masks being required by everyone on campus will have the unfortunate effect of limiting wind and brass players, who cannot be expected to play their instruments and wear a mask simultaneously. Under this scenario, however, strings and percussion could continue to rehearse and explore string orchestra, percussion ensemble, and string orchestra with percussion ensemble literature. This would also help to develop and refine string technique so the orchestra is even stronger when it returns as a full group.
- Ensemble Sizes and Instrumentation: Removing wind and brass players will already result in a significant decrease in size for the orchestras. An additional reason for breaking up ensemble enrollment/participation is to meet university spacing/social distancing requirements between students. If additional size limitations are necessary, we can consider a number of alternative options including:
 - Temporarily offering two symphony orchestras/bands.
 - Limits could also be placed on community involvement/educational outreach for one semester.
 - Rather than creating additional ensembles (i.e. three or four orchestras), rehearsal time could be divided in half with half the orchestra coming to the first half of rehearsal and the second half coming to the second half. Both halves would rehearse the same repertoire. Or, it could be broken up so that both halves are learning different repertoire, but learning less music total.
- Performances: Given these new, more challenging limitations, the semester might result in one concert instead of two. These concerts could be livestreamed as this technology is already in place.

Concerning factors:

- Support for PPE, acrylic shields, masks, etc.
- Room size as accommodation factor for physical distancing
 - Alternate rehearsal spaces (conference rooms, gyms, ballrooms, auditorium, etc.)
- Instrumentation/balance/literature issues
- Recruiting/enrollment strategies and issues

Scenario 2: Virtual instruction for entire fall semester/year

- All points from Scenario 1
 - Strive for collaborative, real-time nature of ensemble learning/instruction
- Contingency plans:
 - Online rehearsing possibilities – Jackpilot, QjackCtl, JamKazam, etc.
 - 1st hour full group, 2nd hour breakout groups/sections
 - “Ensemble training” projects (pedagogical videos?)
 - Remote recording projects - critical/reflective listening to self, others, YouTube recordings; students learn audio/video editing skills (section projects & full-band)
 - Inter-school collaborations?
 - Using software (or similar) to:
 - Develop Practice Guides that allow students the opportunity to solo and mute parts/sections, record, tempo adjust.
 - Students are given specific tracks to prepare/practice with
 - Can also be used for guided sectional rehearsals
 - Guided listening (Ear mapping) is something most incoming students need more of. There might be a way to develop ideas using this tech (through muting/soloing), in addition to development and demonstration sessions online
 - Most of what we do is so visual. Physical gestures, body language, eye communication, etc. Perhaps have conducting students prepare a piece, and record a silent conducting video, without click or guide track – completely internalized. Individuals, or a small group of musicians video over themselves playing to the conducting track (raw/unedited).
 - An interesting experience, method to evaluate clarity, effectiveness of communication, etc.
 - Composition projects - pieces composed for our specific ensembles, that embrace our technological possibilities / limitations (e.g., latency); pieces workshopped, written, performed by the ensemble members
 - Armed Service Bands website resources (U.S.)
 - Virtual clinics with composers, performers, etc.
 - Online Guest Lectures and Masterclasses: Invite guests and music professionals to speak to orchestra students on various topics, from specific technical instruction (i.e. bowing) to careers in the performing arts, orchestra/wind literature, conducting, programming, etc.
 - Comprehensive Musicianship through Performance/Glenn Hayes model
 - digging into scores, form/structure, history, etc.
 - Virtual Performance: Pre-record performance (similar to what other ensembles are doing). Work with each orchestra on the performance of a work (e.g. a movement of a symphony or a shorter, single-movement work). Online coaching/rehearsals would be done with principals of the orchestra (individual and/or as a whole). These principals would then lead sectionals for the rest of their section. Sectional Faculty would also be involved in coaching sectionals. Students would be responsible for submitting weekly/bi-weekly (every other week) recordings of their progress for feedback.

- Technology Skills: Possibility of pairing up orchestra students with audio and music engineers. In lieu of a final recital, students create an album. Ensembles rehearse together electronically and work on a virtual performance/recording that is mastered by students/faculty in the audio and music engineering program.
- Telematic Performance(s): Live performance, presented electronically, with or without pre-recorded elements. Includes possible collaborations with other orchestras, ensembles, and performers around the country/world. This could include non-traditional ensembles (i.e. world music ensembles), and non-traditional pieces (i.e. improvisation and electronic media). Another possible collaboration for telematic performance is to pair groups of musicians with dancers, visual artists, and/or composers, again either from our university or around the world. Collaboration is key.
- Educational Outreach: Student groups develop online performances/discussions/programs as resources for secondary education schools. These can include masterclasses/feedback for ensembles, talking about musical topics such as practice techniques, or interdisciplinary programs (e.g. "The Science of Music.")
- Educational Outreach and Mentorship: Students paired up with high school music students and become their remote mentor. They meet together remotely and consistently and hold discussion on topics including, the transition from high school to University, music audition tips, among others. They can even play music together in a duet setting. This can be for local high school students or even outside the area.
- Outreach Projects: Creating programs or performances (pre-recorded, telematic, or some combination thereof) to share with the community, specifically those members of society that need the most encouragement right now (e.g. elderly in nursing homes and health care workers/first responders). Sharing your love of music remotely to a community organization.
- Individual Rehearsal: Working with students to improve individual skills and practice techniques. This includes practicing with a metronome, being able to match the intonation of a drone or recording, focus on articulation, breath, etc. Smart Music (for which I have a free trial subscription through June 2020 which will likely be extended) is one example of software that helps students to practice.
- Online Reading Sessions: At the regular time of rehearsal each week, students will access Youtube and listen to and "play along" with a specific recording of a piece. They will not be able to hear anyone else playing, but we can enable comments so students can ask questions and make observations. It is an opportunity to work on building sight-reading skills and techniques and exploring the repertoire without the pressure of a performance.
- Student learning outcomes/best pedagogical practices
 - revising/adapting criteria, objectives for online model
 - all activities speak to/address standard and/or additional objectives
 - Virtual Hangouts: Schedule times (ZOOM sessions) when members from the orchestra/chamber ensembles can get together and talk about musical, or non-musical topics and brainstorm for future projects and initiatives. This provides a community bonding component.
 - Virtual Office Hours: Scheduled times (ZOOM sessions) when members of the orchestra can come and talk to their conductor one-one and just check in, and talk about how they're doing, talk about music-related topics, or ask any questions they might have about the projects. This provides opportunity for students to see and feel connected to the director.

Concerning factors:

- Unstable WiFi/Internet
- Technological support/Virtual platforms for audio with a large group of people (more than 4)
 - See Appendix B for ideas
- Sound issues (microphones, headphones)
 - Blue Yeti Nano Premium USB Mic for Recording and Streaming (excellent product at a manageable price point)
- Instrumentation/balance/literature issues
- Percussion
 - Assigning sets of equipment to percussion students on rotation (home delivery)
 - Off Campus: Engage local music stores to acquire equipment and deliver
 - On Campus: Hire trucks/Engage local music stores to help, if using them for other things
 - Midi keyboard/Software/Apps to cover special small percussion
- Recruiting/enrollment strategies and issues
- Directed Study and Graduate conducting students?

Scenario 3: Hybrid model - mix of online and on-campus instruction

- All points from Scenario 1 & 2
 - If an online model is not adopted, smaller chamber ensembles will more than likely be able to resume as normal since they are very small ensembles with fewer members. Students will be told to comply with university/government social distancing and mask requirements. Performances will follow the guidelines outlined below.

Contingency ideas for delivery of Ensemble in Scenario 1, 2, 3

Performances:

- Comprehensive Musicianship through Performance/Glenn Hayes model
- Live-streaming concerts
- Recording projects - students rehearse/record (reference recordings of new Grade 2-3 works, recent premieres, standard rep, etc.)
- Students learn audio/video editing skills
- Pop-up performances? Chamber concerts? Targeted outreach performances?
- "Open Space" off-campus concerts in atria, band shells, parks, gymnasiums, etc.
- Ensemble Sizes and Instrumentation: Ensemble sizes are reduced depending on class size restrictions. For example, perhaps instead of having a symphony orchestra, we temporarily offer two smaller orchestras (chamber orchestras). Limits could also be placed on community involvement for one semester.
 - Rather than creating additional ensembles (i.e. three or four orchestras), rehearsal time could be divided in half with half the orchestra coming to the first half of rehearsal and the second half coming to the second half. Both halves would rehearse the same repertoire. Or, it could be broken up so that both halves are learning different repertoire, but learning less music total. An additional reason for breaking up ensemble enrollment/participation is to meet any university spacing/social distancing requirements between students.
- Performances: Given these new, more challenging limitations, the semester might result in one concert instead of two. An alternative would be to keep the two-concert model and have half the orchestra participate in the first concert and half the orchestra participate in the second concert. These concerts could be livestreamed as this technology is already used.
- Performances and Audience: Performances would continue to be live-streamed. Audience numbers would be restricted in accordance with government/university policy. Audiences may be asked to sit further apart and/or wear masks to performances. If possible, masks would be available in the lobby. If possible, temperature checks would be administered to audience members.

Extra-ensemble issues

- Staffing/lecturers (for those who have extra people who help with ensembles)
- Applied lessons
- Directed Study/Graduate conducting students
- Conducting classes
- Music ed students/ ab bands/student teaching placements
- Methods/Techniques courses
- Auditions
- Recruitment/retention
 - How can we assist High School Music Directors?
 - How can we reach out to High School Music Students?

APPENDIX A

Instrument Cleaning Recommendation

Prepared by The National Association of Professional Band Instrument Repair Technicians (NAPBIRT), with the assistance of Dr. Watkins, Dr. Pliura, Ms. Barron (RN)

We need to be aware of the place and condition where the instruments are coming from. For instance, if no one has been in the rehearsal room or near the instruments for over 15 days, these instruments have already been in "quarantine" for that length of time. However, an instrument from an individual, that has been playing on it recently, is another situation all together.

1. ***Your absolute best bet is to use soap and water first.*** *The reason they say wash your hands for 20 seconds with soap is because soap and water can destroy the viral envelope leaving the virus vulnerable and unstable. So, anything that can be washed with soap and water start there.*
2. ***Next - 70% (or greater) isopropyl alcohol is a good sterilizing agent.*** *For instruments, I would suggest taking alcohol wipes and find a way to snake one through the instrument.*

I have read several studies on the length of time the virus can last on surfaces; wood only lasts a few hours, copper is about 4 hours and all other metals and plastics are 2-3 days. I would tend to be a little more cautious with horns if they have a spit reservoir of some sort. But once they have been cleaned and repaired by time you ship them back, there would be an extremely minimal and unlikely chance for any virus to remain.

Alternatively, if the customer is adamant about wanting more extreme cleaning, they could use a 1% bleach solution in water following by washing with soap and water to prevent any sort of pits from forming in the metal. I think this would be extreme and unnecessary but its personal comfort level.

As we as repair technicians have the most experience with the effects of solutions on surfaces such as lacquer, it may be a good practice to test a spot if you might be concerned of harm. Remember using alcohol must be done carefully on plastic instruments as the alcohol can melt some plastics. Regarding isopropyl alcohol, you could also pour liquid through into an instrument or even dip them if you have that kind of volume but also please understand the safety considerations, as isopropyl alcohol is highly flammable and vapors may form explosive mixtures with air.

There are dangers and we must know how to deal with cleaning agents:

<https://blog.gotopac.com/2016/01/06/the-dangers-of-isopropyl-alcohol/>

<https://blog.gotopac.com/2017/05/15/why-is-70-isopropyl-alcohol-ipa-a-better-disinfectant-than-99-isopropanol-and-what-is-ipa-used-for/>

Good information on bleach:

<https://multimedia.3m.com/mws/media/735976O/disinfection-with-bleach-tech-talk.pdf>

In addition to all of this, please consider your personal Protection Equipment, PPE. Goggles, face shield, solvent resistant gloves, aprons and shoes recommended. Here is SDS information on isopropyl alcohol and bleach:

<https://www.usabluebook.com/images/pdf/201585S.pdf>

<https://www.thecloroxcompany.com/wp-content/uploads/cloroxregular-bleach12015-06-12.pdf>

APPENDIX B

Current Platforms for Possible Virtual Delivery and Equipment

Jackpilot: <https://jackaudio.org>

QjackCtl: <https://qjackctl.sourceforge.io>

JamKazam: <https://www.jamkazam.com>

LoLa: [Not currently viable] <https://conts.it/art/lola-project/old-lola-project-web-site/lola-low-latency-audio-visual-streaming-system>

DaVinci Resolve (iSkysoft):

https://www.iskysoft.us/lp/filmora-video-editor/?gclid=CjwKCAjw95DoBRBFEiwAcO1KDHztjhV8CK4aZyzaiuwppsV4oudbybwkIo_LTzfPW_WvnamMKGxJBxoCmfcQAvD_BwE

Soundwhale: <https://soundwhale.com>

Places that are developing software:

Audio Engineering Society: <https://www.torontoaes.org>

Source Elements: <https://source-elements.com>

Equipment that will help delivery:

Blue Yeti Nano Premium USB Microphone:

https://www.amazon.ca/Blue-Yeti-Premium-Recording-Streaming-dp/Bo7DV2XGP5/ref=sr_1_1?keywords=blue+yeti+Nano+premium+USB+microphone&qid=1589307016&sr=8-1

Wi-Fi Repeater Signal Amplifier – Full Netwrok Coverage – 1200Mbps (Internet Booster Dual Band (5G+2.4G)

https://www.amazon.ca/1200Mbps-Extender-Digital-Wireless-Amplifier/dp/Bo7VHB83J/ref=sr_1_1?keywords=Digital+Wi-Fi+Repeater&qid=1589307233&s=electronics&sr=1-1

This is a link for Zoom users about how to set the audio prefs so that it doesn't try to cancel out music:
<https://support.zoom.us/hc/en-us/articles/115003279466-Preserve-Original-Sound>

And, a link to the very helpful crowd-sourcing Facebook group:

Higher Ed Music Lessons in the Time of COVID-19

<https://www.facebook.com/groups/2657198547711324/>

Alex Shapiro, composer

APPENDIX C

Additional Ideas for Consideration of Remote Delivery

- Safety and well-being is priority (for students and yourself as the Director)
- Layering of ideas and possibilities
- Syllabus needed with options and ideas (Plan A, B, C)
- Develop the whole person/music: Mind, body, spirit
- Be flexible, nimble, offer opportunities, be creative
- How to keep students engaged, inspired and passionate about learning and music-making during the remote deliver time
- Give hope and direction to students- provide virtual office hours and hangouts
- Think what is possible and what can I share with students
- Think of post Covid-19 life and education, musical world
- What can we offer to bring students back to campus and looking forward to playing as a full ensemble again
- Show students, parents, University and Community how music valuable
- Consider creating course packets for students (include mic, tech equip)?
- Ideas for remote deliver, consider student learning objects
- Focus on performance skills but also development of additional skills
- Think of learning outcomes, Tangible outcomes, project-based outcome, Transferable skills outcome, focus on quality of experience not quantity
- What can your program offer that no one else can? Think across curriculum?
- Help students prepare for a career in music, keep them ahead and working on their technique and skills, so they come out ready and competitive.
- Survey students and ask them what skills they feel they still need in order to be in the music career, survey students asking them what they miss about playing in an ensemble.
- For projects, perhaps give 2-3 options, so let students choose their specific interest and topic, based on what they need for their portfolio and career
- Have theme in the course like “Development of Orchestral Skills for the 21st Century Musician”, or “Connection”, or “Unlock your artistic potential” perhaps share theme across the entire department/school of music

APPENDIX D

More Specific Project and Ideas for Ensembles

- Peer mentorship, have students paired up to help and work with one another, helpful especially for new students coming in. This would provide leadership skills for students during remote delivery times.
- Hold virtual office hours, coffee chats, so students can check in with me
- Join forces with other Laurier ensembles, classes, or across campus?
 - For example, collaborate across ensembles, where each director hosts 1 guest artist for all ensemble students, and discussion is specifically on a topic that benefits students in the ensembles.
- Host Guest Artists: Virtual sessions with guest artists on various topics including injury prevention, yoga and mind meditation, audition tips, personal finance skills, management skills, professional development sessions (CV, resume, grade school prep, etc.), technology skills, and other skills useful for their career
- Join forces with other University orchestras across Canada
 - Showcase for one another- University orchestras
- Outreach to High School Music programs
 - Mentorship program between Laurier music students and High School music students ("helping hawks" "hawk heroes"), one to one, play together, connect, chat, Q&A between me and students with High School directors and programs
 - Have sessions on mock interviews with students, questions to prepare
- Specialized session by year in school. For example, first years session with me and older students (orchestra board) to provide support and tips, or have specific sessions by instrumental section (strings, winds, brass, percussion)
- Bring back alumni orchestra players or other graduated music students to chat to current students about the music career and life after Laurier.
- Audition mock – live with the director, one-on-one sessions
- Excerpts - recorded and submitted to director for feedback and assessment
- Also think of including peer evaluation (assigned small groups) that listen to one another and provide constructive feedback. Student include written reflection component.
- Listening exercise and written response, (include score), listen to 2-3 specific recordings of a piece, then come together virtually for discussion on the piece and the various interpretations.
- Watch a performance together live- come together online and watch a performance of a piece by an orchestra, share reactions and discussion in live time, while observing the performance.

- New Music Compositions – do background research on a Symphony Orchestra piece composed after 2000. Compile a paper or present to the group.
- Canadian composer and piece- do background research on Canadian composer and one of his/her pieces. Compile a paper or present to the group.
- Interview a composer- interview a living composer and discover what it's like to work with composers, how to commission new works, how to collaborate with composers. This can also be an interview for professional musician, or interview a professional currently working in the field of your interest. Compile a paper of your interview and discussion.
- Female composer and piece - listen and observe a piece by a female composer, do background research and compile a paper or present to the group.
- Minority composer and piece - listen and observe a piece by an under-represented composer and culture, do background research and compile a paper or present to the group.
- Quiz on term definition, foreign terms, bow articulation terms
- Partner playing and help- sectionals, practice buddy, practice pods
- Score and part analysis, mark in score/part (use colors) and analyze how your part fits into the entire work, who plays with you, when do you have the melody, the harmony, etc.
- Audition Introduction video – create video and introduce yourself and answer 5 audition questions:
 - Why music? What does music mean to you?
 - What skills are needed in order to be a successful musician today?
 - What does it mean to *succeed*?
 - What does a good leader look like, or do? The art of leadership? (how would you lead, your leadership style?)
 - Name a challenge or moment of struggle you experienced and what you learned from that experience?
- Final project: create your own professional website portfolio (orchestral focus)
 - include audio/video of orchestral excerpts you recorded this term
 - include your reflection papers
 - include your audition introduction video
- Final paper on an orchestra piece, the composer, with your part analyzed in relationship to the full score.
- Final video presentation of your paper on the selected orchestra piece and composer
- Final virtual orchestra performance, assign piece at start of term,
 - a piece we will perform in the winter
 - long term project, so they have all term to prepare
 - Start of Winter term, they are ready to dive in and perform a concert
- Play it forward – how can you use your talents, love of music to give back?
 - Allow students to be creative and share their love of music to community.
 - Either making video for community, audio recording for neighbors, etc.

- Written Blog or Video Blog – with written weekly practice reflection, talk about
 - what you did, what worked/didn't work, what to do better next time, and what you learned going forward, etc.
- Collaboration with Opera/Singers – pair up orchestral students to vocal students and do collaborative project together, practice and prepare an opera recit/aria together, have discussion of aria and how their instrumental piece plays into the song, or analyze voice line with the instrumental line, creative movement project focusing on expression, emotion, story-telling, etc.

APPENDIX E

Interesting Articles and Discussions

LARGE ENSEMBLE PROTOCOLS: As an initial step, we are advocating for revisioning facilities use to allow 3–5 meters of spacing for music ensembles. Such a shift in rehearsal spaces will require administrative planning.

Here is the current preliminary scholarly info about music making:

(1) Risk Assessment Regarding Corona-Infections in Music Making (Freiburg article)

<https://www.mh-freiburg.de/en/university/covid-19-corona/risk-assessment/>

(2) Wind/brass instruments may not be as contagious as first thought (Bamberg article)

<https://medium.com/@SixtoFMontesinos/wind-instruments-may-not-be-as-contagious-as-we-thought-b821e59ob29a>

(3) Wearing face masks in a band environment/possible use of a flute wind guard to reduce air spreading beyond the headjoint

<https://win-d-fender.com>

(4) NATS, ACDA, Chorus America, Barbershop Harmony Society, and Performing Arts Medical Association (PAMA) Webinar

A Conversation: What Do Science and Data Say About the Near-Term Future of Singing

<https://www.youtube.com/user/OfficialNATS>

https://www.middleclassartist.com/post/nats-panel-of-experts-lays-out-sobering-future-for-singers-no-vaccine-no-safe-public-singing?fbclid=IwARooHQBzQv9i3qj6s_N9LRRNALM5lJAUOWvMFk9El5HiLPAkyGXwMi8cMo