

# Music Performance & Instruction Over High-Speed IP Networks

Christianne Orto, Assistant Dean & Director  
Manhattan School of Music

Internet2 Member Meeting  
New Orleans  
October 14<sup>th</sup>, 2008



Christianne Orto Manhattan School of Music Distance Learning

# Manhattan School of Music Distance Learning

- 1996
- 1<sup>st</sup> Conservatory in United States
- Concept: Access & Accommodation
- Maestro Pinchas Zukerman



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# MSM Distance Learning

- 27 of 50 States
- 15 Foreign countries
- 1700 students/each year
- Wide-adoption from MSM Faculty
- Jazz, Orchestral Program, Voice Dept.



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# Collaborators & Partners

- Conservatories
- Music Schools
- Performing & Presenting Organizations
- K-12 Schools
- Community Centers, Hospitals



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# Program Content

## Types of Music Applications

- Masterclasses
- One-to-One Lessons
- Clinics
- Coachings
- Workshops
- Professional Development
- Composer Colloquia
- Sectionals
- Educational & Community Outreach



Musical Theater Masterclass



Conducting Seminar



# Program Content

## Types of Music Applications

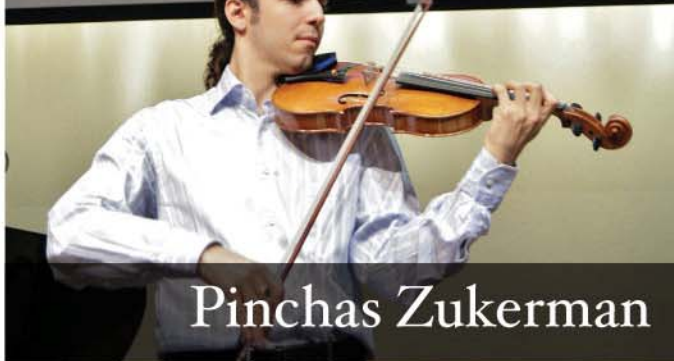
- “Telementoring”
- Recruitment Demos
- Remote Auditions
- Mock Auditions
- Panel Discussions
- Humanities Exchanges
- Webcasting



# Classical Programs with Manhattan School of Music



Pinchas Zukerman



Thomas Hampson



# Jazz Programs with Manhattan School of Music



Kenny Barron



Dave Liebman





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*Manhattan School of Music Distance Learning*

# Friends and Family Weekend 2nd Annual Student Showcase Concert & Webcast

Thursday, October 16th

7:30pm

Locations: Miller Recital Hall or

<http://distancelearning.msmnyc.edu/live>



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# Issues & Challenges

## H. 323

- Limited Frequency Bandwidth (7 Khz)
- Mono sound
- Low bit-rate sound quality (8-bit)
- No Dynamics or Dynamic range
- Loss or absence (muting) of sound
- Network & Codec Latencies
- Acoustic Echo Cancellation Artifacts



# Audio-Visual Illustrations



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# Application Requirements

- Transparent & seamless virtual environment conducive to learning/teaching. (Low–Latency)
- True, accurate sonic representations of the acoustical properties of sound and music.
- Full-frequency response (50 Hz-22 Khz) or > full human auditory bandwidth
- Stereo Sound



# Application Requirements

## Structural Elements of Music:

Melody; Harmony (pitch); Rhythm (duration);  
and Form

## Expressive Elements of Music:

Timbre, Dynamics, Tempo, articulation, texture  
with contrasts & changes therein



# MSM-Polycom Collaboration

Live Music Mode



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