UNIVERSITY OF NORTH TEXAS
COLLEGE OF MUSIC

Kris Chesky, Ph.D.
Texas Center for Music & Medicine

SAFE·IN·SOUND
EXCELLENCE IN HEARING LOSS PREVENTION AWARD

2010 Award for Innovation

College of Music is one of the largest and most respected comprehensive schools of music

1,650 students enrolled and training to become music professionals
- 70% undergraduate
- 350 in teacher training programs
- 100 employed as Teaching Fellows or Assistants
- 75 employed as hourly workers
- Many work as performing musicians while in school

Non-student employees
- 100 full time faculty
- 50 adjunct faculty
- 40 full time staff

Over 40 different ensemble-based learning activities that meet daily

Over 1000 performances per year (in addition to instructional activities)

Interface with Environment, Health, and Safety Department

UNT Grand Chorus

"I believe that every person learning about music in the United States, from early grade school through college, must be taught to understand that music is a sound source capable of harming hearing and that music can be studied, practiced, performed, and consumed in ways that are not risky to hearing."

Kris Chesky

One O'clock Lab Band

1: TAKE A STAND

http://www.unt.edu/hpsm/

Position statements by MENC and MTNA

2: LEAD BY EXAMPLE

✓Apply Safety in Instructional Activities <u>Policy</u> to Music Classes

✓Develop <u>Educational Goals and Objectives</u> to Implement Policy

✓Design and Offer Occupational Health <u>Course</u> for Music Students

✓Develop and Disseminate <u>Support Materials</u> for Music Educators

3: RESEARCH

Chesky K, Henoch M (2000) **Instrument-specific Reports of Hearing Loss: Differences between Classical and Non-classical Musicians.** Medical Problems of Performing Artists. 15(1) pp. 35–38.

Chesky K, Pair M, Lanford S, Yoshimura E (2009) **Attitudes of College Music Students towards Noise in Youth Culture**. Noise & Health: 42(11) pp. 49-53.

Chesky K, Pair M, Yoshimura E, Lanford S (2009). **Evaluation of Musician Earplugs with College Music Students**. International Journal of Audiology. 48:661-670.

UNT Wind Symphony

# # 4: Establish Exposure Databases

Includes over 600 individual instructional events
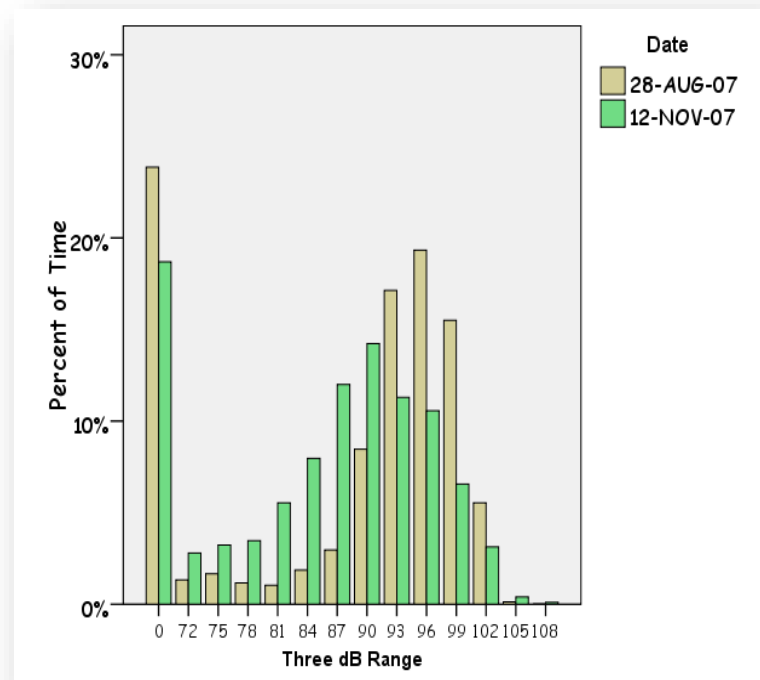
Demonstrates:

- Need for hearing conservation (40% exceeded 100% Dose)

- Inadequacy of snapshot views and limited repeated measures

- Need for continuous measures due to high variability over time

- Need for new measurement technologies & analytic procedures

- Pedagogic elements as critical predictors of risk

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5: Dosimeter Metrics

Time Series – Leq/sec
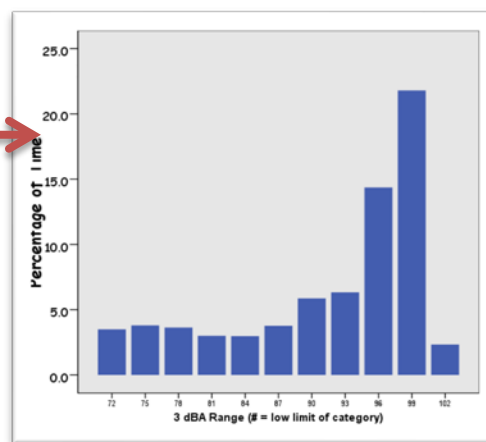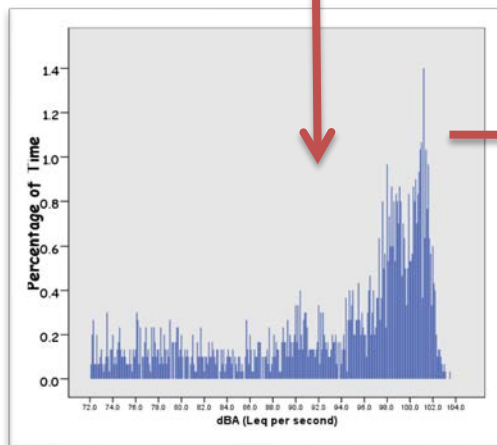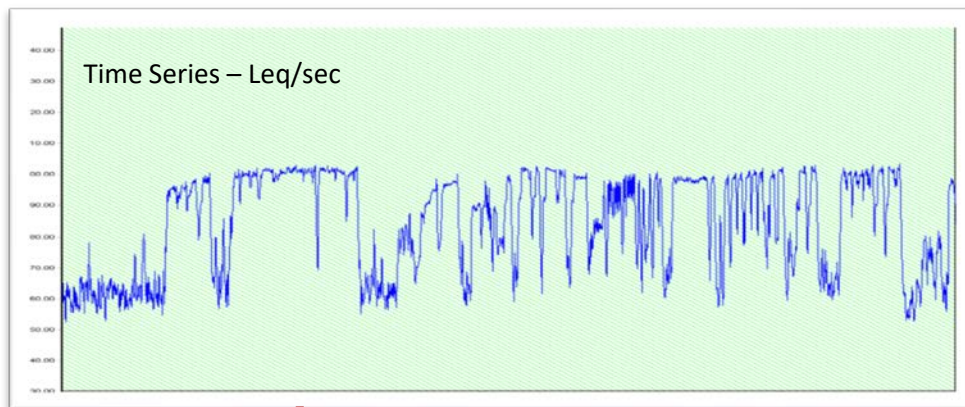
"Percentage of time at dynamic levels"
view can be used to compare events.
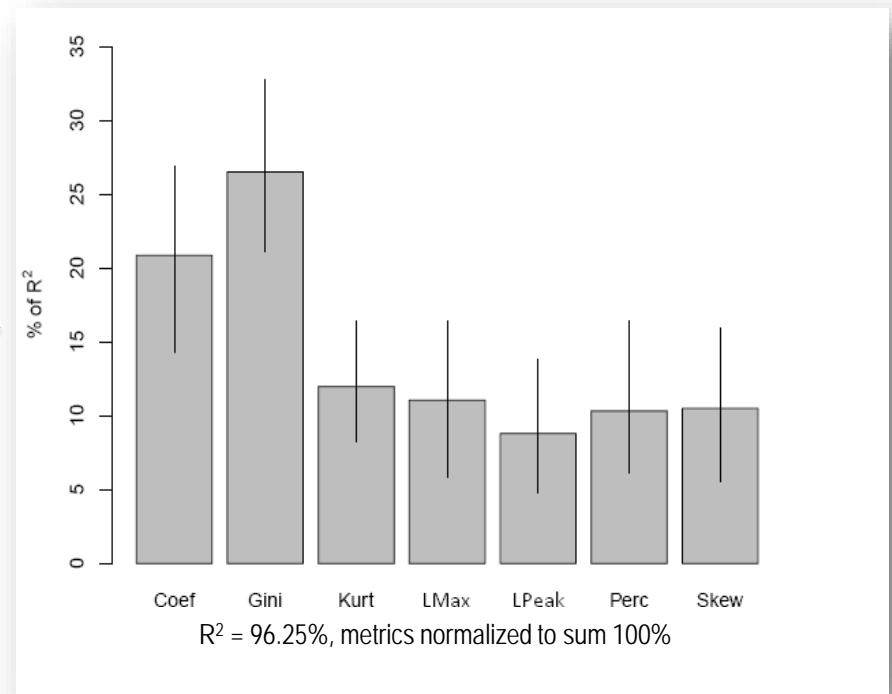
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Method includes time series data to calculate measures of moments and dispersion.

Dose over Time for Two Wind Bands - same Room
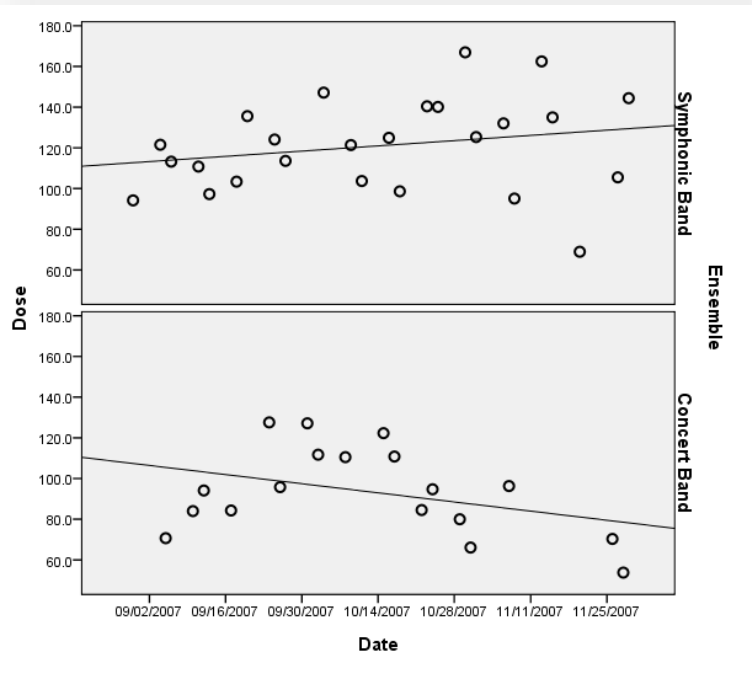
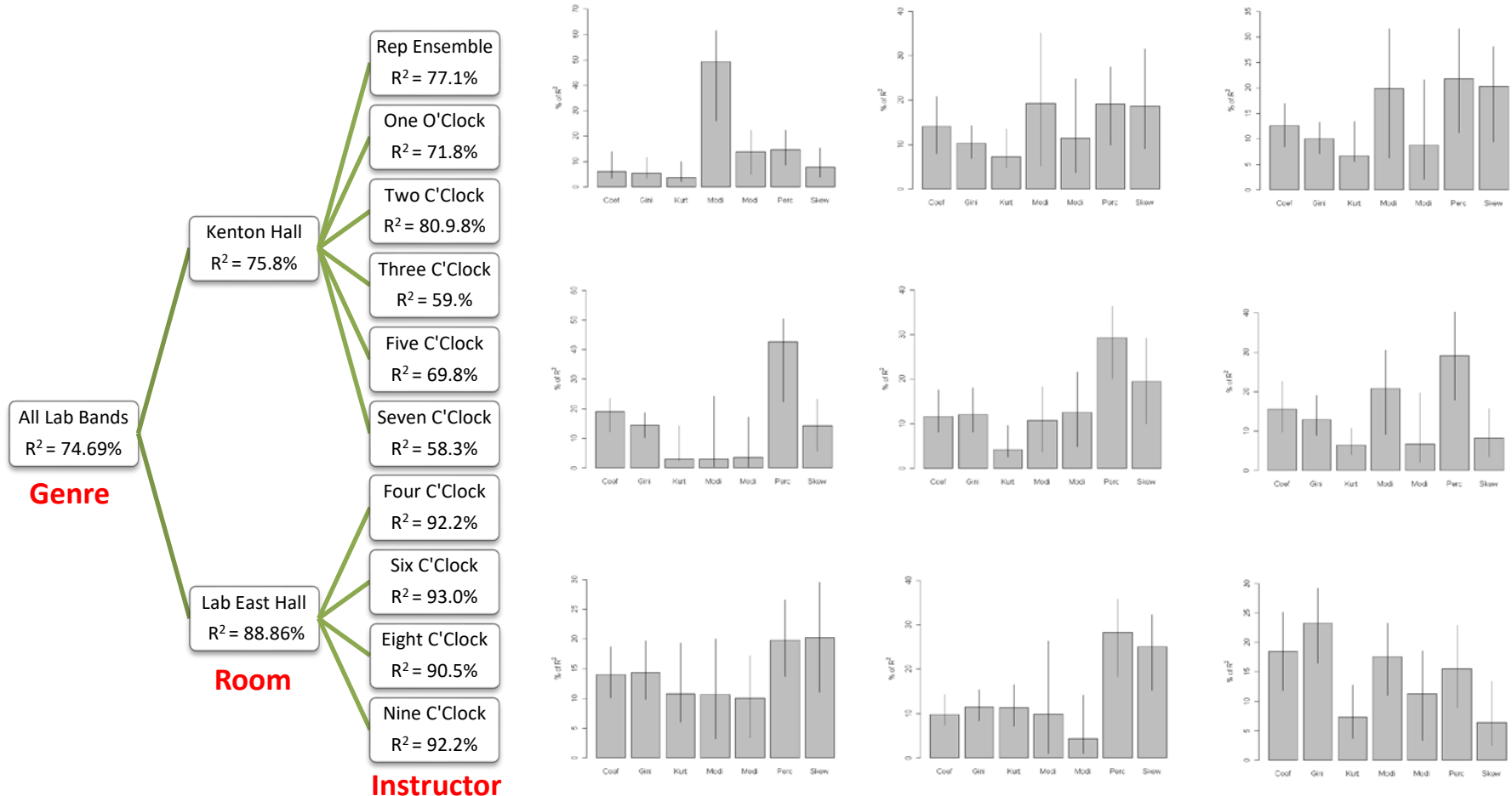**Relative Importance metrics for Predictors of Dose for Wind Bands**

$R^2 = 96.25\%$, metrics normalized to sum 100%

Indices are used to explain fluctuations in dose generated during instructional activities.

Can be used to explain fluctuations in dose across genre, room, and instructor.

Rep Ensemble
R^2 = 77.1%

One O'Clock
R^2 = 71.8%

Two C'Clock
R^2 = 80.9.8%

Kenton Hall
R^2 = 75.8%

Three C'Clock
R^2 = 59.%

Five C'Clock
R^2 = 69.8%

Seven C'Clock
R^2 = 58.3%

All Lab Bands
R^2 = 74.69%

Genre

Four C'Clock
R^2 = 92.2%

Six C'Clock
R^2 = 93.0%

Lab East Hall
R^2 = 88.86%

Eight C'Clock
R^2 = 90.5%

Room

Nine C'Clock
R^2 = 92.2%

Instructor

University of North Texas College of Music

6: Direct-Reading Exposure Assessment Methods

- Modeled after NIOSH D.R.E.A.M. Initiative

- Working with UNT College of Engineering to develop new hardware and software solutions.

Goal:

- To have automated system for surveillance program

- To provide automated feedback to ensemble teachers

What's Next?

NASM NATIONAL ASSOCIATION OF SCHOOLS OF MUSIC

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Thank You

HPSM
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Ross Roeser
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Laura Wilber

NHCA Task Force
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College of Music
Administration
Faculty
Students

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Deanna Meinke, Thais Morata
& "Expert Committee Members"