

SLIDES FROM THE 2015 WAVES WORKSHOP

Click on a slide to see it in a slideshow.

Workshop LaSalle University April 2015 WAVES Sound and Light

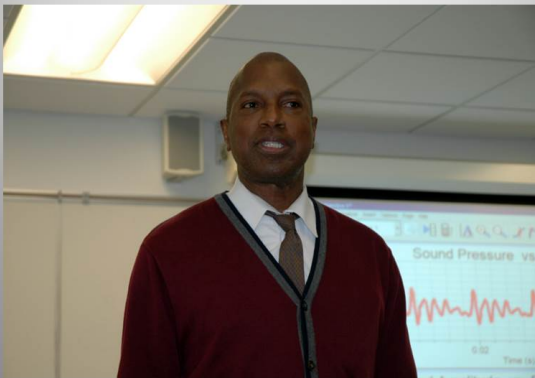
Presenters: Bill Berner, Jay Bagley
Bob Schwartz, Barry Feierman

Hosts: Greer Richardson, Ling Liang
Supported by: SEPS/AAPT and PRNP

Section Rep Jay Bagley and LaSalle Host Ling Liang



Jay Bagley discussing Section Events for 2015/2016



Jay introduces various physics journals and other resources



Future Workshops in the plans



Bob Schwartz shows his demos



Sounds that change based on human presence



Sound board enhances amplitude



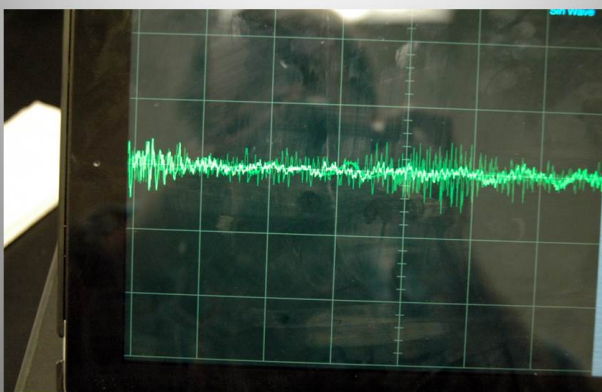
What do the lights "say" when spun?



A "water lens" forms an image of the bulb on the ceiling



Listening to a local radio station with a homemade AM detector



What if our eyes were farther apart?



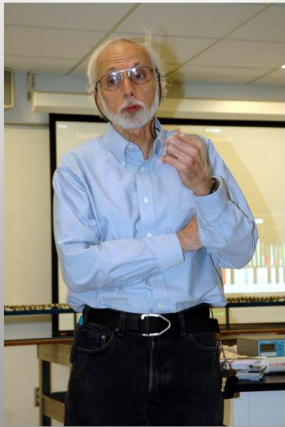
Whoooo ... Art looks weird!



Natural Frequency



Bill Berner discusses the basic properties of waves



Home made apparatus to show interference of sound waves



Mechanical Wave Generator from Univ Penn



Sound Resonance with Tuning Forks



Interferometer with Laser



Polarization demo



What happens when we introduce a third polarizing filter?



It would take hours to play with all of the demos set up in this room



Barry discusses the acoustics of the guitar



What is the resonant frequency of the guitar box itself?



Barry demonstrates resonance in a closed pipe and how chimes work



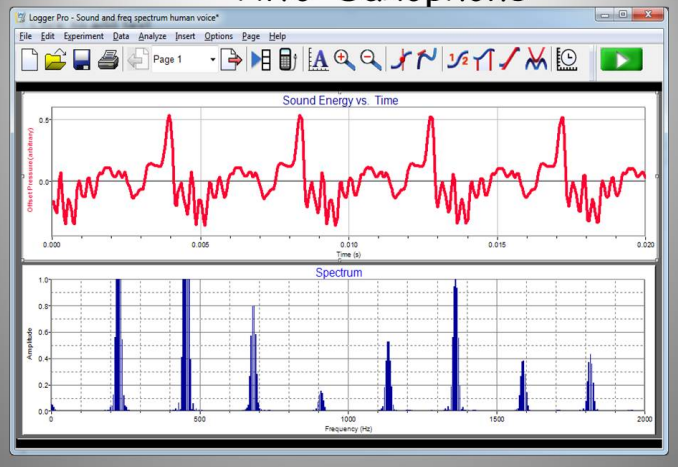
Transverse waves on a long spring



Saxophones have strange timbre



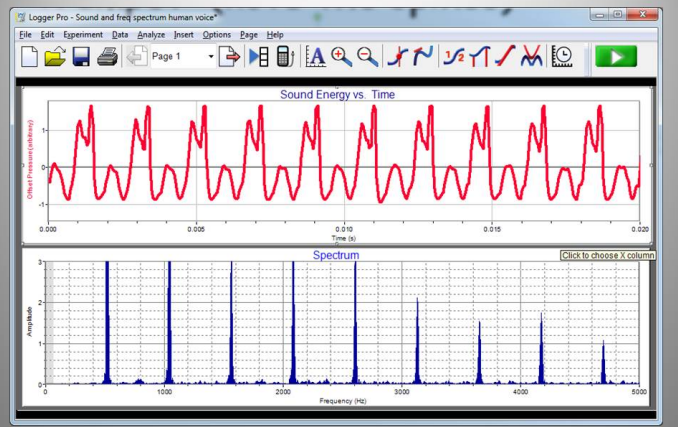
Alto Saxophone



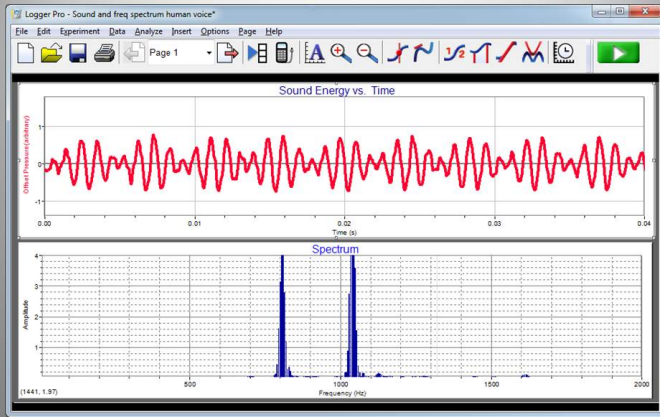
Bugles can only play a few harmonics of the fundamental. Does wrapping the tubing alter its pitch or timbre?



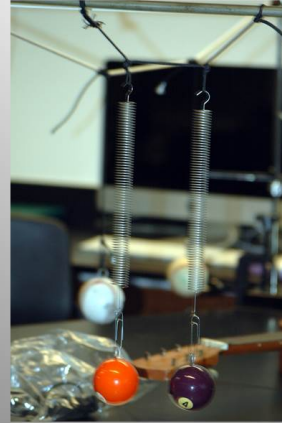
Trumpet (note the spikes)



Two-tone RR Train Whistle



Resonance of spring oscillators



Idiophones - vibrating solids: **TUNING FORKS**
Why does the pitch depend on the length?



Wine Glass: Harmonium

Does adding water increase or decrease the pitch?



Wind Chimes



Thanks to our hosts at LaSalle University
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