

- “Study of Spin-Spin Interactions in Binary Black Hole Initial Data,” S.H. Hawley, 3rd Gulf Coast Gravity Meeting, March 23, University of Alabama at Huntsville, March 23 2007.

Undergraduate Research Supervised

BURS / SURS

- “Kick Drum Tunnels: A Physical Analysis of a Recording Technique,” Philip Feurtado, BURS talk (2011).
- “Frequency Response of Tube Amps, Solid-State Amps, and Amp Modeling Software” Mckenzie Jordan, Carlos Robledo, Alex Burns, Tyler McGraw, BURS poster (2011).
- “Effects of Enclosure Design on Sub-Kick Microphone Response,” Jon Fairman, Schyler Blackman, Miles Cary, BURS poster (2011).
- “Construction and Evaluation of a Plate Reverb,” Jacob Veal, Stephen McInturff and Patrick Griffin, SURS poster (with live demo) (2010).
- “Noise Reduction by Roadway Sound Barriers: Acoustical Design & Construction,” Chris Diebold, Zach ShROUT, Eric Thompson, and Chris Moffit, SURS poster (2010).
- “A VST Plugin for Physical Modeling of Reverberation Time,” Tyler Welton, SURS talk (2009) and BURS talk (2010).
- “The Resonance of a Crystal Glass,” Thomas Muellner, Steve Browne and Lindsay Woodward, BURS poster (2009).
- “The O-Port: An Analysis,” Laura Gearhart, David Jefries, Michael Rohr and Nathan Taylor, BURS poster (2009). Analyzed a product I got donated at a NAMM show for student research purposes.
- “Vocal Spectrum Analyzation,” Rachael Aull, Wesley Burkhart and Eric Westmaas, BURS poster (2009).
- “Research on the Spectral Effects of Dynamic Processors: Measurements of Overtone Changes and Harmonic Distortion,” David Brubaker and David Walker, BURS poster (2009).
- “Testing the Effectiveness of Homemade Diffusors,” Chase Bennett, Michael Corl, AJ Gilmer, SURS poster (2008).
- "Acoustical Analysis of a Belmont Dorm Room," Travis Lee Briles, Drew Dean, Steve Smith and Jackie Whitis, BURS poster (2008).
- "Acoustical Treatment of the Bruin Hills Clubhouse," Gordon Droitcour, Aaron Eshuis, Robert Nasteff and Kevin Warren, BURS poster (2008).
- "A Study of Bathroom Reverb for Vocal Recording," Blake Keifner, Matt Humke, Steve Corrao, John Meckes, BURS poster (2008).
- “The Physics of Rock: Mersenne’s Laws,” Caleb Kinch, Dean Wright, Joel Boyter and Phil Feurtado, BURS poster (2008).
- “An Examination of Temperament,” Dustin Martin, Taylor Grubbs and Cory Goff, SURS poster (2008).
- “Microphone Placement on Snare Drum Based on Resonant Frequencies and Chladni Patterns,” Scott Songer, Joe Reinders, Matthew Hamilton and Elliot Wiley, SURS poster (2008).
- “Acoustic Modes of Nonrectangular Rooms,” Clark Johnson. Independent study resulting in a talk at SURS (2007).

Other Undergraduate Research

- “Sound Transmission through Household Items,” Nicholas Black, Dillon Marlow, Jeremy Quarles and Daniel Watson (2011).
- “Analysis of a Kick Drum Tunnel,” David Andrews, Michael Burell, Paul Hart and Jasper Lemaster (2011).
- “Modulated Waves as Carriers and Controls,” Samuel Johnson, Keith Perez and William Crews (2011).
- “Reverberation: Measurement Analysis of T_R for Three Different Rooms,” Dane Mantia, Michael Geiger and Seiji Inouye (2011).

- “Speed of Sound vs. Temperature,” Patrick Goley, Andrew Thurston and Kent Goodall (2011).
- “Room Tuning: Utilizing a Small Home Mixing Environment,” Michael Hardesty and Art Lindman (2010).
- “The Harmonic Series of Various Guitar Strings Under High Amplitudes and Driven Oscillation,” Marc Chirico, Scott Boughner and Nathan Martin (2010).
- “Modification of a Belmont Dorm Room for Mixing Purposes,” Spencer Lyons, Richard Swor and Kyle Webber (2010).
- “Suitability of Rooms for Certain Musical Instruments,” Parker Roberts, Robert Chase and Heather Scott (2010).
- “Varying the Transformer in a Dynamic Microphone,” Matthew Longworth, Nathan Stiteler, Andrew Oldham and Ryan Swinehart (2010).
- “Measuring Reflections Off of Various Surfaces,” Luke Fitzgerald and Jake Jorgovan (2010).
- “Subkick Research,” Nathan Baldwin, Gary Lancaster and Chet Jameson (2009).
- “Sub-Kick Micropone Analysis,” Daniel Wasby (2009).
- “An Exploration of a Tunable Corner-Mounted Diaphragmatic Absorber: Creation of a Bass Trap,” David Morgan and Matthew Rausch (2009).
- “Mix Room Analysis,” Eric Green (2009).
- “Room Tuning Using Diaphragmatic Panel Absorbers,” Ian Hall, Tim Hollar, Ryan McFadden and Matt Stocking (2009).
- “Absorption Coefficients of Porous Absorbers,” Jake Kerry, Dave Shatto and Michael Cupo (2009).
- “Small Listening Room Acoustical Design,” Matt James (2009).
- “(Not) Breaking a Wine Glass with Sound,” Chris Herlevic, Dianna Mariotti and Jameson Haggard (2009).
- “Harmonic Content Associated with Various Guitar Harmonic Techniques,” Alan Brown, David Kincaid and Iaian Smallwood (2009).
- “Phase Relationships Between Room Mics,” Kevin Fulda (2009).
- “Determination of Mass by Changes in the Resonance of Medium Density Materials,” David Macklom and Adam Bokesh (2009).
- “Room Mode Comparisons,” Joseph Hutchinson and Benjamin Duran (2009).
- “The Kundt’s Tube,” Kyle Anderson, Joseph Moore and Corey Oxendine (2009).
- “Analysis of Clark Acoustic Panels,” Jeremy Clark (2008).
- “The Leslie Speaker’s Unique Sound: The Doppler Effect,” Kent Toalson (2009).
- “Polycylindrical and Panel Absorbers,” Brandon Braaum, Jon King and Jessica Abtahi (2009).
- “Transmission Coefficients of Various Wall Insulation Materials,” Sam Hester (2009).
- “Subharmonics and Behaviors in Chladni Plates,” Lindsey M. Thompson (2009).
- “Helmholtz Absorbers,” Kyle Schonewill and Mark Anderson (2009).
- “Construction and Testing of a Quadratic Residue Diffusor,” Andrew Cherecwich, Ben Garner, Samuel Goodwin and Luke Miller (2008).
- “The Zone Plate,” Evan P. Donohue (2009). Evan constructed an acoustic lens.
- “Faraday Waves in Cornstarch Media,” Nicholas Williams (2007).
- “Chladni Plate Dynamics,” Richard Brodock, Matthew Dragstrem, Heath Keene, Rachel DeGrandis (2007).
- There are roughly 15 more titles from 2007 and 2008, but I didn’t begin archiving student research reports in earnest until 2009.

Research Progress – Black Hole Studies

- August 2006 - Submitted to CQG. Not accepted. Last couple graphs showed poor accuracy.
- Since that time, I worked on fixed mesh refinement (FMR) upgrades to reduce the memory overhead (adding thousands of lines of code) and improved parallelism to re-do these graphs.