

Department of Physics

Summary

The Department of Physics was established in 1935. Our mission is “the advancement of Physics through excellence in research and the extension of scientific heritage through education.” Over the years the department has created and nurtured a unique blend of applied and fundamental research to improve our understanding of the world around us and to respond to the needs of our community. Our research efforts are primarily in the areas of acoustics, computational physics, cosmology, Earth and planetary sciences, environmental physics, ion beam physics, geophysics, magnetism and magnetic materials, space physics, laboratory astrophysics, cosmochemistry, and materials science (physics.louisiana.edu). The department consists of eight full-time research-oriented faculty, two instructors, four emeritus professors, and about 40 undergraduate and graduate students. We offer both Bachelor’s of Science (BS) and Master’s of Science (MS) degrees in Physics. The department has partnered with the School of Geosciences and the Department of Chemistry to build an interdisciplinary doctoral program which will focus on research in energy, the environment, and the physics of the Earth. This doctoral program in Earth and Energy Sciences will begin Fall 2019.

This report summarizes the professional accomplishments of the research-active physics faculty from 2013 to 2018. Since 2013, the physics faculty have served as Principal or Co-Principal Investigators on 52 research grants totaling \$21,157,563, which, on average, amounts to \$352,626 per year per active faculty member. Since 2013, we have published 67 peer-reviewed journal articles (1.12 per faculty per year), 11 book chapters, and 30 conference proceedings papers. The expertise of the physics faculty is recognized by invitations to deliver 43 plenary and invited conference talks and to serve as referees of 57 scientific journals, including *Science* and *Nature*. The faculty also authored and co-authored 30 conference presentations and organized 18 special sessions and meetings. Our faculty pride themselves in educating future scientists and teachers; we served as chairs and co-chairs on 34 MS Thesis and Doctoral dissertation committees.

Publications, Presentations, Editorships, and Talks

Refereed Journal Papers (Published)

1. Lee, K.J. *, Oldenburg, C.M., Doughty, C.A., Jung, Y., Borgia, A., Pan, L., **Zhang, R.**, Daley, T.M., Altundas, B., Chugunov, N., Ramakrishnan, T.S. (2018). Simulations of carbon dioxide push-pull into a conjugate fault system modeled after Dixie Valley—Sensitivity analysis of significant parameters and uncertainty prediction by data-worth analysis. *Geothermics*, **74**, 121-134. doi:10.1016/j.geothermics.2018.02.011
2. Jung, Y. *, Doughty, C., Borgia, A., Lee, K.J., Oldenburg, C.M., Pan, L., Daley, T.M., **Zhang, R.**, Altundas, B., Chugunov, N., Ramakrishnan, T.S. (2018). Pressure transient analysis during CO₂ push-pull tests into faults for EGS characterization. *Geothermics*, **75**, 180-191. doi:10.1016/j.geothermics.2018.05.004
3. **Zhang, R.** & Deng, Z. (2018). A depth variant seismic wavelets extraction method for inversion of post-stack depth domain seismic data. *Geophysics*, **83**(6), R569-R579. doi:10.1190/geo2017-0816.1
4. Chunhakorn, V., Ratchathamma, P., **Whitlow, H.J.** & Chienthavorn, O. (2018). Inexpensive simple extraction of trace PAHs from water using PS-DVB monolithic beads. *Analytical Methods*, **10**(39), 4813-4820. doi:10.1039/C8AY01562G
5. Chukwunonye, C.U., Jones, N.J., **Petculescu, G.** (2018). Sensitization in Aluminum Alloys: Effect on Acoustic Parameters. *Corrosion*, **74**(11), 1237- 1244. doi:10.5006/2832
6. Killion, K., Kumar, R., Taylor, C.J., **Morra, G.** (2018). Seismology and Volcanology: Exploration of Volcanoes, Long-Periods, and Machines-Predicting Volcano Eruption Using Signature Seismic Data. *SMU Data Science Review*, **1**(1), 11.
7. **Charilaou, M.**, Braun, H.-B., Löffler, J.F. (2018). Monopole-Induced Emergent Electric Fields in Ferromagnetic Nanowires. *Physical Review Letters*, **121**, 097202. doi:10.1103/PhysRevLett.121.097202
8. Pierobon, L., Moutafis, C., Li, Y., Löffler, J.F., **Charilaou, M.** (2018). Collective antiskyrmion-mediated phase transition and defect-induced melting in chiral magnetic films. *Scientific Reports*, **8**, 16675. doi:10.1038/s41598-018-34526-0
9. Jones, N.J., Yoo, J.-H., Ott, R.T., Lambert, P.K., **Petculescu, G.**, Simsek, E., Schlagel, D., Lograsso, T.A. (2018). Magnetostrictive performance of additively manufactured CoFe rods using the LENSTM system. *AIP Advances*, **8**(5), 056403. doi:10.1063/1.5007673
10. Stoppini, L., **Whitlow, H.J.**, Guibert, E., Jeanneret, P., Homsy A., Roth J., Krause S., Roux A. (2017). Post-focus expansion of ion beams for low fluence and large area MeV ion irradiation: Application to human brain tissue and electronics devices. [Special Issue] *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Proceedings of the 15th International Conference on Nuclear Microprobe Technology and Applications*, **404**, 87-91. doi:10.1016/j.nimb.2017.01.054

11. Gunawardana, P.M. & **Morra, G.** (2017). Correlation between elastic energy density and deep earthquakes distribution. *Journal of Geodynamics*, **106**, 33-45. doi:10.1016/j.jog.2017.02.002
12. Ackleh, A.S., Chiquet, R.A., Ma, B., Tang, T., Caswell, H., Veprauskas, A., **Sidorovskaia, N.** (2017). Analysis of lethal and sublethal impacts of environmental disasters on sperm whales using stochastic modeling. *Ecotoxicology*, **26**(6), 820-830. doi:10.1007/s10646-017-1813-4
13. Vockenhuber, C., Arstila, K., Jensen, J., Julin, J., Kettunen, H., Laitinen, M., Rossi, M., Sajavaara, T., Thöni, M., **Whitlow, H.J.** (2017). Energy loss and straggling of MeV Si ions in gases. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*. **391**, 20-26. doi:10.1016/j.nimb.2016.11.030
14. Norarat, R., Jainontee, K., Thianthaisong, W., Sriwang, S., Nakajima, H., Chienthavorn, O., Guibert, E., **Whitlow, H.J.** (2017). MeV ion exposure behaviour of PMMA resist polymer studied by synchrotron light spectroscopies. [Special Issue] *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Proceedings of the 15th International Conference on Nuclear Microprobe Technology and Applications*, **404**, 238-242. doi:10.1016/j.nimb.2017.01.061
15. Wang, L., Meyer, C., Guibert, E., Homsy, A., & **Whitlow, H.J.** (2017). Fabrication of high-transmission microporous membranes by proton beam writing-based molding technique. [Special Issue] *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Proceedings of the 15th International Conference on Nuclear Microprobe Technology and Applications*, **404**, 224-227, doi:10.1016/j.nimb.2017.04.069
16. Sudprasert, R.M.W., Guibert, E., Wang, L., Chappuis, T., & **Whitlow, H.J.** (2017). Micro-PIXE study of metal loss from dental amalgam. [Special Issue] *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Proceedings of the 15th International Conference on Nuclear Microprobe Technology and Applications*, **404**, 106-109. doi:10.1016/j.nimb.2017.01.024
17. **Whitlow, H.J.**, Guibert, E., Jeanneret, P., Homsy, A., Roth, J., Krause, S., Roux, A., Eggerman, E., Stoppini, L. (2017). Post-focus expansion of ion beams for low fluence and large area MeV ion irradiation: scaling from the single-event to the system level in human brain tissue and electronics devices. [Special Issue] *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Proceedings of the 15th International Conference on Nuclear Microprobe Technology and Applications*, **404**, 87-91. doi:10.1016/j.nimb.2017.01.054
18. Krammer, A., Magrez, A., Vitale, W.A., Mocny, P., Jeanneret, P., Guibert, E., **Whitlow, H.J.**, Ionescu, A.M., & Schüler, A. (2017). Elevated transition temperature in Ge doped VO₂ thin films. *Journal of Applied Physics*, **122**(4), 045304. doi:10.1063/1.4995965
19. **Whitlow, H.J.** (2016). System on Chip (SoC) microcontrollers (μ C) as low-cost digitisers for ion beam analysis (IBA) instruments. *Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms*, **383**, 245-249. doi:10.1016/j.nimb.2016.05.033

20. Insuan, W., Khawmodjod, P., **Whitlow, H.J.**, Soonthondechcha, P., Malem, F., Chienthavorn, O. (2016). High-Throughput and Low-Cost Analysis of Trace Volatile Phthalates in Seafood by Online Coupling of Monolithic Capillary Adsorbent with GC-MS. *Journal of Agricultural and Food Chemistry*, **64**(16), 3287-3292. doi:10.1021/acs.jafc.6b00742
21. Puttaraksa, N., **Whitlow, H.J.**, Napari, M., Meriläinen, L., Guibert, L. (2016). Development of a microfluidic design for an automatic lab-on-chip-operation. *Microfluidics and Nanofluidics*, **20**(10), 142. doi:10.1007/s10404-016-1808-0
22. **Dent, J.B.**, Dutta, B., Newstead, J.L., & Strigari, L.E. (2016). Effective field theory treatment of the neutrino background in direct dark matter detection experiments. *Physical Review D*, **93**, 075018. doi:10.1103/PhysRevD.93.075018
23. Fontenot, R.S., Allison, S.W., Lynch, K.J., **Hollerman, W.A.**, & Sabri, F. (2016). Mechanical, spectral, and luminescence properties of ZnS:Mn doped PDMS. *Journal of Luminescence*, **170**, 194-199. doi:10.1016/j.jlumin.2015.10.047
24. Bhat, K.N., Fontenot, R.S., **Hollerman, W.A.**, & Aggarwal, M.D. (2016). Effects of Water on the Triboluminescent Properties of Europium Tetrakis Dibenzoylmethide Triethylammonium. *ECS Journal of Solid State Science and Technology*, **5**(6), R110-R113. doi:10.1149/2.0231606jss
25. **Petculescu, A.** (2016). Acoustic properties in the low and middle atmospheres of Mars and Venus. *Journal of the Acoustical Society of America*, **140**, 1439-1446. doi:10.1121/1.4960784
26. Leighton T.G. & **Petculescu A.** (2016). Guest Editorial: Acoustic and related waves in extraterrestrial environments. *Journal of the Acoustical Society of America*, **140**, 1397-1399. doi:10.1121/1.4961539
27. **Sidorovskaia, N.A.** & Li, K. (2016). Decadal evolution of the northern Gulf of Mexico soundscapes. *Proceedings of Meetings on Acoustics*, **27**, 040014. doi:10.1121/2.0000382
28. Bell, N.F., Cai, Y., **Dent, J.B.**, Leane, R.K., & Weiler, T.J. (2015). Dark matter at the LHC: Effective field theories and gauge invariance. *Physical Review D*, **92**, 053008. doi:10.1103/PhysRevD.92.053008
29. **Dent, J.B.** (2015). Review of the possible role of self-ordering scalar fields in the production of a stochastic background of gravitational waves. [Special Issue] *International Journal of Modern Physics D, Testing Inflationary Scenarios with the Planck and BICEP2 Results*, **24**(4), 1541005. doi:10.1142/S0218271815410059
30. **Dent, J.B.**, Krauss, L.M., Newstead, J.L., & Sabharwal, S. (2015). A General Analysis of Direct Dark Matter Detection: From Microphysics to Observational Signatures. *Physical Review D*, **92**(6), 063515. doi:10.1103/PhysRevD.92.063515
31. Fontenot, R.S., Bhat, K.N., Owens, C.A., **Hollerman, W.A.**, & Aggarwal, M.D. (2015). Effects of added dibutyl phosphate on the luminescent properties of europium tetrakis dibenzoylmethide triethylammonium. *Journal of Luminescence*, **158**, 428-434. doi:10.1016/j.jlumin.2014.10.026
32. Bhat, K.N., Fontenot, R.S., **Hollerman, W.A.**, & Aggarwal, M.D. (2015). Incorporating Strongly Triboluminescent Europium Tetrakis Dibenzoylmethide Triethylammonium and Phthalocyanine. *International Journal of Chemistry*, **4**(2), 87-93.

33. Fontenot, R.S., **Hollerman, W.A.**, Bhat, K.N., & Aggarwal, M.D. (2015). Real Time Brake Pad System: A New Novel Application of Triboluminescent Materials. *International Journal of Chemistry*, **4**(4), 336-339.
34. Justo, J.F., **Morra, G.**, & Yuen, D.A. (2015). Viscosity hills in the lower-mantle: The role of iron spin transition. *Earth and Planetary Science Letters*, **421**, 20-26. doi:10.1016/j.epsl.2015.03.013
35. Jones, N.J., **Petculescu, G.**, Wun-Fogle, M., Restorff, J.B., Clark, A.E., Hathaway, K. B., Schlagel, D., & Lograsso, T.A. (2015). Effects of Zn Additions to Highly Magnetoelastic FeGa Alloys. *Journal of Applied Physics*, **117**(17), 17E701. doi:10.1063/1.4907181
36. Lograsso, T.A., Jones, N.J., Schlagel, D.L., **Petculescu, G.**, Wun-Fogle, M., Restorff, J.B., Clark, A.E., & Hathaway, K.B. (2015). Rhombohedral magnetostriction in dilute iron (Co) alloys. *Journal of Applied Physics*, **117**(17), 17A913. doi:10.1063/1.4916541
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38. Wang, S., Yuan, S., Ma, M., **Zhang, R.**, & Luo, C. (2015). Wavelet phase estimation using ant colony optimization algorithm. *Journal of Applied Geophysics*, **122**, 159-166. doi:10.1016/j.jappgeo.2015.09.013
39. **Zhang, R.**, Vasco, D., Daley, T.M., & Harbert, W. (2015). Characterization of a fracture zone using seismic attributes at the In Salah CO₂ storage project. [Special Section] *Interpretation*, **3**(2), SM37-SM46. doi:10.1190/INT-2014-0141.1
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41. **Zhang, R.**, Vasco, D. & Daley, T.M. (2015). Study of seismic diffractions caused by a fracture zone at In Salah carbon dioxide storage project. *International Journal of Greenhouse Gas Control*, **42**, 75-86. doi:10.1016/j.ijggc.2015.07.033
42. Fontenot, R.S., Owens, C.A., Bhat, K.N., **Hollerman, W.A.**, & Aggarwal, M.D. (2015). Magnesium tetrakis dibenzoylmethide triethylammonium: A novel blue emitting phosphor. *Materials Letters*, **146**(5), 9-11. doi:10.1016/j.matlet.2015.01.141
43. Fourel, L., Goes, S., & **Morra, G.** (2014). The role of elasticity in slab bending. *Geochemistry, Geophysics, Geosystems*, **15**, 4507-4525. doi:10.1002/2014GC005535
44. Butterworth, N.P., Muller R.D., Quevedo, L.A., O'Connor, J.M.B., Hoernle, K.C., **Morra, G.** (2014). Pacific Plate slab pull and intraplate deformation in the early Cenozoic. *Solid Earth*, **5**, 757-777. doi:10.5194/se-5-757-2014
45. Bhat, K.N., Fontenot, R.S., Surabhi, R., **Hollerman, W.A.**, Aggarwal, M.D., & Alapati, T.R. (2014). Measurement of the Triboluminescent Properties for Europium and Samarium Tetrakis Dibenzoylmethide Triethylammonium. *Electronic Materials Letters*, **10**(6), 1149-1153. doi:10.1007/s13391-014-3378-1
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47. **Dent, J.B.**, Krauss, L.M., & Mathur, H. (2014). Killing the straw man: Does BICEP prove inflation at the GUT scale? *Physics Letters B*, **736**, 305-307. doi:10.1016/j.physletb.2014.07.046
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50. **Petculescu, A.** & Kruse, R. (2014). Predicting the characteristics of thunder on Titan: A framework to assess the detectability of lightning by acoustic sensing. *Journal of Geophysical Research: Planets*, **119**, 2167-2176. doi:10.1002/2014JE004663
51. Fontenot, R.S., **Hollerman, W.A.**, Bhat, K.N., Aggarwal, M.D., & Penn, B.G. (2013). Incorporating Strongly Triboluminescent Europium Dibenzoylmethide Triethylammonium into Simple Polymers. *Polymer Journal*, **46**(2), 111-116. doi:10.1038/pj.2013.78
52. **Dent, J.B.**, Dutta, S., Saridakis, E.N., & Xia, J.-Q. (2013). Cosmology with non-minimal derivative couplings: Perturbation analysis and observational constraints. *Journal of Cosmology and Astroparticle Physics*, **2013**(11), 058. doi:10.1088/1475-7516/2013/11/058
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54. Newstead, J.L., Jacques, T.D., Krauss, L.M., **Dent, J.B.**, & Ferrer, F. (2013). The Scientific Reach of Multi-Ton Scale Dark Matter Direct Detection Experiments. *Physical Review D*, **88**(7), 076011. doi:10.1103/PhysRevD.88.076011
55. Krauss, L.M. & **Dent, J.B.** (2013). Higgs Seesaw Mechanism as a Source for Dark Energy. *Physical Review Letters*, **111**(6), 061802. doi:10.1103/PhysRevLett.111.061802
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57. Bhat, K.N., Fontenot, R.S., **Hollerman, W.A.**, Alapati, T.R., & Aggarwal, M.D. (2013). Effects of Adding Caffeine on the Triboluminescent Properties of Europium Dibenzoylmethide Triethylammonium. *International Journal of Chemistry*, **2**, 165-172.
58. Fontenot, R.S., **Hollerman, W.A.**, Bhat, K.N., & Aggarwal, M.D. (2013). Effects of added uranium on the triboluminescent properties of europium dibenzoylmethide triethylammonium. *Journal of Luminescence*, **134**, 477-482. doi:10.1016/j.jlumin.2012.07.042
59. Fontenot, R.S., Bhat, K.N., **Hollerman, W.A.**, & Aggarwal, M.D. (2013). Effects of Dimethyl Methylphosphonate on the Triboluminescent Properties of Europium Dibenzoylmethide Triethylammonium. *Sensors & Transducers Journal*, **149**(2), 109-115.

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61. Kobakhidze, L., Guidry, C., **Hollerman, W.A.**, & Fontenot, R. (2013). Detecting Mechanoluminescence From ZnS:Mn Powder Using a High Speed Camera. *IEEE Sensors Journal*, **13**(8), 3053-3059. doi:10.1109/JSEN.2013.2261489
62. Fontenot, R.S., **Hollerman, W.A.**, Bhat, K.N., Allison, S.W., & Aggarwal, M.D. (2013). Luminescent Properties of Lanthanide Dibenzoylmethide Triethylammonium Compounds. *Journal of Theoretical and Applied Physics*, **7**, 30. doi:10.1186/2251-7235-7-30
63. Fontenot, R.S., Bhat, K.N., **Hollerman, W.A.**, Alapatia, T.R., & Aggarwal, M.D. (2013). Triboluminescent Properties of Dysprosium Doped Europium Dibenzoylmethide Triethylammonium. *ECS Journal of Solid State Science and Technology*, **2**(9), P384-P388. doi:10.1149/2.030309jss
64. van Dinther, Y., Gerya, T.V., Mai, P.M., Dalguer, L.A, **Morra, G.** (2013). The seismic cycle at subduction thrusts: insights from coupled seismo-thermo-mechanical geodynamic models. *Journal of Geophysical Research: Solid Earth*, **118**, 6183-6302. doi:10.1002/2013JB010380
65. **Morra, G.**, Muller, D., Quevedo, L., Seton, M. (2013). Organization of the tectonic plates in the last 200 Myrs. *Earth and Planetary Science Letters*, **373**, 93-101. doi:10.1016/j.epsl.2013.04.020
66. **Morra, G.**, Geller, R., Grilli, S.T., Karato, S.-I., King, S., Lee, S.-M., Tackley, P., & Yuen, D.A. (2013). Growing Understanding of Subduction Dynamics Indicates Need to Rethink Seismic Hazards. *EOS, Transactions of the American Geophysical Union*, **94**(13), 125-126. doi:10.1002/2013EO130008
67. **Petculescu A.** & Lueptow R.M. (2013). Quantitative acoustic relaxational spectroscopy for real-time monitoring of natural gas: A perspective on its potential. *Sensors and Actuators B: Chemical*, **169**, 121-127. doi:10.1016/j.snb.2012.03.086
68. Chiquet, R.A., Ma, B. Ackleh, A.S., Pal, N., & **Sidorovskaia, N.** (2013). Demographic analysis of sperm whales using matrix population models. *Ecological Modeling*, **248**, 71-79. doi:10.1016/j.ecolmodel.2012.09.023

Refereed Journal Papers (Accepted)

1. **Whitlow, H.J.**, Guibert, E., Wang, L., Van Der Meer, M., Jeanneret, P. (In Press). Time detector design for Time-of-Flight Elastic Recoil Detection Analysis (ToF-E ERDA). *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*. doi:10.1016/j.nimb.2018.11.010
2. Sudprasert, W., Meesat, R., **Whitlow, H.J.**, Udeogu, H., De Vera, A.B. & Deoli, N. (In Press). Investigation of mercury pathways from dental amalgam by micro-PIXE. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*. doi:10.1016/j.nimb.2018.10.029

Book Chapters

1. Vasco, D.W., Bissell, R.C., Bohlooli, B., Daley, T.M., Ferretti, A., Foxall, W., Goertz-Allmann, B.P., Korneev, V., Morris, J.P., Oye, V., Ramirez, A., Rinaldi, A.P., Rucci, A., Rutqvist, J., White, J., & **Zhang, R.** (2018). Chapter 12: Monitoring and Modeling Caprock Integrity at the In Salah Carbon Dioxide Storage Site, Algeria. In: Vialle, S., Ajo-Franklin, J. & Carey, J.W. (eds). *Geophysical Monograph Series. Geological Carbon Storage: Subsurface Seals and Caprock Integrity*, **238**, 243-269. Hoboken, NJ: Wiley. doi:10.1002/9781119118657.ch12
2. Fontenot, R.S., Bhat, K.N., **Hollerman, W.A.**, Aggarwal, M.D. (2016). Europium Tetrakis Dibenzoylmethide Triethylammonium: Synthesis, Additives, and Applications. In: Olawale, D. O., Okoli, O., Fontenot, R.S., & **Hollerman, W.A.**, (eds). *Triboluminescence: Theory, Synthesis, and Applications*. 147-235. Cham, Switzerland: Springer International. doi:10.1007/978-3-319-38842-7_7
3. Goedeke, S.M., **Hollerman, W.A.**, Allison, S.W., Fontenot, R.S. (2016). Detection of Low-Velocity-Impact Triboluminescent Emissions. In: Olawale, D.O., Okoli, O., Fontenot, R.S., & **Hollerman, W.A.**, (eds). *Triboluminescence: Theory, Synthesis, and Applications*. 333-350. Cham, Switzerland: Springer International. doi:10.1007/978-3-319-38842-7_11
4. Fontenot, R.S., **Hollerman, W.A.**, Bergeron, N. P. (2016) Triboluminescence at Speeds Greater than 100 m/s. In: Olawale, D.O., Okoli, O., Fontenot, R.S., & **Hollerman, W.A.**, (eds). *Triboluminescence: Theory, Synthesis, and Applications*. 441-444. Cham, Switzerland: Springer International. doi:10.1007/978-3-319-38842-7_14
5. **Sidorovskaia, N.A.**, Ackleh, A.S., Tiemann, C.O., Ma, B., Ioup, J.W., Ioup, G.E. (2016). Passive Acoustic Monitoring of the Environmental Impact of Oil Exploration on Marine Mammals in the Gulf of Mexico. In: Popper, A., Hawkins, A. (eds). *The Effects of Noise on Aquatic Life II: Advances in Experimental Medicine and Biology*, **875**, 1007-1014. New York, NY: Springer. doi:10.1007/978-1-4939-2981-8_125
6. Ioup, G.E., Ioup, J.W., **Sidorovskaia, N.A.**, Tiemann, C.O., Kuczaj, S.A., Ackleh, A.S., Newcomb, J.J., Ma, B., Paulos, R., Ekimov, A., Rayborn, G.H., Stephens, J.M., Tashmukhambetov, A.M. (2016). Environmental Acoustic Recording System (EARS) in the Gulf of Mexico. In: Au, W., Lammers, M. (eds). *Listening in the Ocean*. New York, NY: Springer-Verlag. doi:10.1007/978-1-4939-3176-7_6
7. **Morra, G.**, Yuen, D.A., Lee, S.M., & Zhang, S. (2015). Chapter 5: Source of the Cenozoic Volcanism in Central Asia. In: Morra, G., Yuen, D.A., King, S.D., Lee, S.-M., & Stein, S. (eds). *Subduction Dynamics: From Mantle Flow to Mega Disasters. AGU Geophysical Monograph Series*. **211**, 97-113. Hoboken, NJ: Wiley. doi:10.1002/9781118888865.ch5
8. **Morra, G.**, Yuen, D.A., Lee, S.M., & King, S.D. (2015). Introduction: The Impact of Subduction Dynamics on Mantle Flow, Continental Tectonics and Seismic Hazard. In: Morra, G., Yuen, D.A., King, S. D., Lee, S.-M., & Stein, S. (eds). *Subduction Dynamics: From Mantle Flow to Mega Disasters. AGU Geophysical Monograph Series*. **211**, 1-4. Hoboken, NJ: Wiley.
9. Fontenot, R.S., Bhat, K.N., **Hollerman, W.A.**, & Aggarwal, M.D. (2013). Chapter 3: Highly Triboluminescent Europium Dibenzoylmethide Triethylammonium. In:

Moustafa, S.A. (ed). *Europium: Synthesis, Characteristics and Potential Applications*, 85-160. Hauppauge, NY: Nova Science Publishers.

Conference Proceeding Papers

1. **Hollerman, W.A.**, Fontenot, R.S., Darby, P., Pugh, N., & Miller, J. (2018). Using Exotic Materials Like EuD_4TEA and MgD_4TEA to Monitor Damage and Radiation Exposure in Extreme Environments. In: *ECS Transactions, Selected Proceedings from the 233rd ECS Meeting: Seattle, WA - Spring 2018*, **85**(13), 1615-1623. Pennington, NJ: The Electrochemical Society. doi:10.1149/osf.io/94ujn
2. **Hollerman, W.A.**, Fontenot, R.S., Williams, S., Deoli, N., DeVera, A.B., & Miller, J. (2018). *New Half Brightness Fluence Measurements for Large-Grained ZnS:Mn , EuD_4TEA , and MnD_4TEA Samples* (Poster). 25th International Conference on the Application of Accelerators in Research and Industry. Grapevine, TX, August 2018.
3. Ma, M. * & **Zhang, R.** (2018). *Multichannel impedance inversion for nonstationary seismic data based on modified alternating direction method of multipliers* (Poster). SEG International Exposition 88th Annual Meeting, Anaheim, CA, October 2018. doi:10.1190/segam2018-2970902.1
4. Locci-Lopez, D. *, **Zhang, R.**, Oyem, A. & Castagna, J. (2018). *The multiscale Fourier transform* (Poster). SEG International Exposition 88th Annual Meeting, Anaheim, CA, October 2018. doi:10.1190/segam2018-2994723.1
5. **Hollerman, W.A.**, Miller, J., Deoli, N., & Enk, J. (2018). *Evidence of a Simple Damage Energy Scaling Rule for Proton Irradiation of Luminescent Materials* (Poster). 25th International Conference on the Application of Accelerators in Research and Industry. Grapevine, TX, August 2018.
6. Deoli, N.T., de Vera, A.B., Coutee, K.L., Dias, J.D., Udeogu, H.E., Klerks, P.L., **Hollerman, W.A.**, & Hasenstein, K.H. (2018). *Status of the Louisiana Accelerator Center*. 25th International Conference on the Application of Accelerators in Research and Industry. Grapevine, TX, August 2018.
7. **Zhang, R.** & Deng, Z. (2018). *A depth variant seismic wavelets extraction method for inversion of post-stack depth domain seismic data*. 80th EAGE Conference and Exhibition. Copenhagen, Denmark, June 2018. doi:10.3997/2214-4609.201800728
8. **Zhang, R.** & Deng, Z. (2018). *A depth variant seismic wavelets extraction method for inversion of post-stack depth domain seismic data*. CPG/SEG Beijing 2018 International Geophysical Conference and Exposition. Beijing, China, April 2018.
9. **Sidorovskaia, N.**, Comeaux, D., Greenhow, D., Griffin, S., Heimlich, S., Pierpoint, C., Richter, C., & Scala, L. (2017). *Proceedings of the LADC-GEMM 2017 Gulf of Mexico Experiment*. LADC-GEMM, Lafayette, LA.
10. **Sidorovskaia, N.**, Griffin, S., & Richter, C. (2016). *Proceedings of the LADC-GEMM 2016 Gulf of Mexico experiment. Long-term mooring deployment cruise*. LADC-GEMM, Lafayette, LA.
11. **Hollerman, W.A.**, Fontenot, R.S., Williams, S., & Miller, J. (2016). Using Luminescent Materials as the Active Element for Radiation Sensors. In: Pham, K.D., Chen, G. (eds). *Proceedings of SPIE 9398, Sensors and Systems for Space Applications IX*, **9838**, 98380Z. doi:10.1117/12.2228934

12. Ziegwied, V. Dobbin, C. Pierpoint, **Sidorovskaia N.**, & Dyer S. (2016). Using Autonomous Surface Vehicles for Passive Acoustic Monitoring (PAM). In: *Proceedings of Oceans 201616, MTS/IEEE. Monterey, CA, September 19-23, 2016.* doi:10.1109/OCEANS.2016.7761380
13. Daley, T.M., Oldenburg, C.M., Borgia, A., **Zhang, R.**, Doughty, C., Jung, Y., Altundas, B., Chugunov, N., & Ramakrishnan, T.S. (2016). Enhanced characterization of faults and fractures at EGS sites by CO₂ injection coupled with active seismic monitoring, pressure-transient testing, and well logging. *AGU Fall Meeting, San Francisco, CA, December 12-16, 2016.*
14. Wood, W., Runyan, T., & **Zhang, R.** (2016). A machine learning approach to quantifying geologic similarities between sites of gas hydrate accumulation. *AGU Fall Meeting, San Francisco, CA, December 12-16, 2016.*
15. **Zhang, R.**, Zhang, K., & Alekhue, J.E. (2016). Depth domain seismic reflectivity inversion with compressed sensing technique. *SEG International Exposition and 86th Annual Meeting. Dallas, TX, October 16-21, 2016.*
16. **Zhang, R.** & Fomel, S. (2016). Application of predictive painting to well-log data interpolation and seismic inversion. *SEG International Exposition and 86th Annual Meeting. Dallas, TX, October 16-21, 2016.* doi:10.1190/segam2016-13577612.1
17. **Zhang, R.** & Fomel, S. (2016). Time-variant wavelet extraction with spectral decomposition for seismic inversion. *SEG International Exposition and 86th Annual Meeting. Dallas, TX, October 16-21, 2016.* doi:10.1190/segam2016-13531166.1
18. Karimi, P., Fomel, S., & **Zhang, R.** (2016). Time-lapse image registration using the stratigraphic-coordinate system. *SEG International Exposition and 86th Annual Meeting. Dallas, TX, October 16-21, 2016.* doi:10.1190/segam2016-13870797.1
19. Oldenburg, C.M., Daley, T.M., Borgia, A., **Zhang, R.**, Doughty, C., Ramakrishnan, T.S., Altundas, B., & Chugunov, N. (2016). Preliminary simulations of carbon dioxide injection and geophysical monitoring to improve imaging and characterization of faults and fractures at EGS sites. *Stanford Geothermal Workshop 41st Annual. Stanford, CA, February 2016.*
20. **Morra, G.**, Yuen, D. ., Justo, F.J., & Wentzcovitch, R. (2015). Upwelling through the iron spin transition in the lower mantle and a volatile rich upper mantle transition zone. *Central Asian Tectonics and Western Pacific Geodynamics International Conference. Wuhan, Hubei, China, June 6, 2015.*
21. **Morra, G.** & **Sidorovskaia, N.** Acoustic Detection and Numerical Models of Landslide Induced Tsunamis in The Gulf of Mexico. *GSA South East, 64th Annual Meeting. Chattanooga, TN, March 20, 2015.*
22. **Sidorovskaia, N.**, Griffin, S., Kusel, E., & Richter, C. (2015). Proceedings of LADC-GEMM 2015 Gulf of Mexico Experiment. Part II: Recovery Cruise. *LADC-GEMM. Lafayette, LA.*
23. Borgia, A., Oldenburg, C.M., **Zhang, R.** & Ramakrishnan, T.S. (2015). *TOUGH Symposium 2015, Lawrence Berkeley National Laboratory, Berkeley, CA, September 28-30, 2015.*
24. **Zhang, R.** & Zhang, B. (2015). Seismic reflectivity attributes. *SEG International Exposition and 85th Annual Meeting, New Orleans, LA, October 18-23, 2015.* doi:10.1190/segam2015-5746900.1

25. **Zhang, R.**, Vasco, D.W., Daley, T.M., & Harbert, W. (2015). Characterization of a fracture zone using seismic attributes at the In Salah CO₂ storage project. *SEG International Exposition and 85th Annual Meeting, New Orleans, LA, October 18-23, 2015*. doi:10.1190/segam2015-5737359.1
26. **Hollerman, W.A.**, Fontenot, R.S., Bhat, K.N., Aggarwal, M.D., Guidry, C.J., & Nguyen, K.M. (2013). Review of Triboluminescence Impact Research at Projectile Speeds of 1 m/s to 6 km/s. *Procedia Engineering, Proceedings of the 12th Hypervelocity Impact Symposium*, **58**, 392-400. doi:10.1016/j.proeng.2013.05.045
27. **Petculescu, A.** (2013). A physical model for predicting the sound speed and attenuation coefficient in Titan's atmosphere based on Cassini-Huygens data. *Proceedings of Meetings on Acoustics, ICA-ASA, Montreal, Canada, June 2-7, 2013*, **19**, 045028. doi:10.1121/1.4799155
28. Malekhanov, A.I., **Sidorovskaia, N.A.**, Khil'ko, A.I., Borodina, E.L., & Smirnov, I. P. (2013). Formation of stable space-time structures at propagation of broadband pulses in oceanic waveguides and their destruction at randomly distributed inhomogenities. Proceedings of the XIV L.M. Brekhovskikh's Conference, Москва, ГЕОС г. [In Russian with summary translated in English].

Plenary and Keynote Presentations

- **Morra, G.** *The Physics of the Deepest Subduction Earthquakes*. International Workshop: From Swarms to Slabs. University of Tokyo, Tokyo, Japan, May 2017.
- Yuen, D.A. & **Morra, G.** *Vital Role of Training and Education in Big Data Applications DMESS (Data Mining in Earth System Science)*. Workshop at ICDM 2017: IEEE International Conference on Data Mining, New Orleans, November, 2017.
- **Whitlow, H.J.**, Guibert, E., Wang, L., Van Der Meer, M., & Jeanneret, P. *Time detector design for Time-of-Flight Elastic Recoil Detection Analysis (ToF-E ERDA) revisited*. International conference on Ion Beam Analysis. Fundan University, Shanghai, China, 8-13 October, 2017.
- **Dent, J.B.** *New particle searches confronting the first LHC Run-2 data*. IPMU. Kashiwanoha, Japan, September 2015.
- **Morra, G.**, Yuen, D.A., & Mook Lee, S. *Computational Methods for Volcanology: Application to Central Asian Volcanism*. Invited 1 hour talk, Institute of Geodesy and Geophysics, Chinese Academy of Sciences. Wuhan, Hubei, China, June 11, 2015.
- **Morra, G.** *Subduction, megathrusts and underwater landslides: What the 2011 Japanese tsunami has taught us about tsunami hazard*. South Western Louisiana Geophysical Society, 2014.

Invited Conference / Workshop Talks

Dent, James B.

- Mitchell Institute Workshop on Collider, Dark Matter, and Neutrino Physics. Texas A&M University. College Station, TX, May 2016.
- Invited Speaker. CETUP* workshop on Dark Matter. Lead, SD, July 2016.

- Speaker at COSMOS International Conference. University of Michigan, Ann Arbor, MI, August 2016.
- *Effective Field Theories as Discovery Tools* (Invited Speaker). Mainz Institute of Theoretical Physics. Mainz, Germany, September 2016.
- Fermilab meeting on Dark Matter at a Future 100TeV Collider. Fermilab, Batavia, IL, December 2015.
- Coherent Neutrino Scattering Workshop. Texas A&M University. College Station, TX, November 2015.
- Mitchell Institute's Dark Matter Workshop. Texas A&M University. College Station, TX, May of 2015.

Hollerman, William A.

- *Using Exotic Material Like EuD₄TEA to Monitor Damage and Radiation Exposure in Space* (Invited Talk). Engineering Technology Symposium, Northwestern State University. Natchitoches, LA, October 17, 2018.
- *Use of Phosphors to Detect Debris Impacts and Proton Irradiation in Space* (Invited Talk). Inaugural International Conference on Phosphor Thermometry, University of Strathclyde. Glasgow, Scotland, July 27, 2018.
- Invited Talk with Paul Darby, Engineering. NASA Academy of Aerospace Quality (AAQ): Supporting Quality Assurance for Payloads Developed by Student Teams. NASA Quality Leadership Forum. Cape Canaveral, FL, March 14, 2018
- *Potential of Using EuD₄TEA for Space-Based Damage and Radiation Sensors*. 232nd Electrochemical Society Meeting, Luminescence and Display Materials: Fundamentals and Applications (J01). National Harbor, MD, October 4, 2017.
- *Using Luminescent Materials as the Active Element for Radiation Sensors*. SPIE Defense + Commercial Sensing, Conference 9838, Space Payload Technologies for Dual Military-Civil Operations. Baltimore, MD, April 19, 2016.
- *Using Luminescent Materials as the Active Element for Radiation Sensors*. Naval Surface Warfare Center Carderock Division. West Bethesda, MD, April 20, 2016.
- Research Opportunities at the Louisiana Accelerator Center, Naval Surface Warfare Center Carderock Division. West Bethesda, MD, May 25, 2016.
- Collaborations on EuD₄TEA Research. Army Research Laboratory, Sensors and Electron Devices (SEDD). Adelphi, MD, July 26, 2016.
- *Using Luminescent Materials for Space Radiation Sensors*. International Conference on the Application of Accelerators in Research & Industry. Fort Worth, TX, November 3, 2016.
- *Triboluminescent Materials: Uses in Smart Sensors and Technology*. 8th Energy, Materials, and Nanotechnology (EMN) Meeting. Orlando, FL, November 22, 2014.

Jadhav, Manavi

- *Microanalytical investigations of stardust from meteorites*. UL Institute for Materials Research and Innovation (IMRI). Lafayette, LA, 2018

Morra, Gabriele

- *Machine Learning Identification of Lava Lake Images of the Erebus Volcano, Antarctica* (Poster Presentation). Workshop. Princeton, NJ, 2018.
- *Machine Learning Identification of Lava Lake Images of the Erebus Volcano, Antarctica* (Poster Presentation). Workshop. Santa Fe, New Mexico, 2018.
- One Hour Webinar. Computational Infrastructure for Geodynamics. February 2018.
- *Python and Jupyter Notebooks in Geodynamics and Education*. CIDER Summer School on Deep Earth Interiors, Kavli Institute for Theoretical Physics, UC Santa Barbara. Santa Barbara, CA, July 2018.
- Invited talk. Workshop for the 70th birthday of David A. Yuen. Sardinia, Italy, June 2018.
- *On the origin of the deep Earthquakes in the Earth and other research* (Invited Presentation). Seminar, Department of Earth and Environmental Sciences, Tulane University. New Orleans, LA, September 2018.
- *Pythonic Parallel Implementation of 3D Lattice Boltzmann Method for Geophysical and Geological Applications*. AGU Fall Meeting. Washington DC, December 2018.
- Reconstruction of Fault Geometry Through Hypocenter Clustering for Coulomb Stress Analysis During the L'Aquila Earthquake Swarm (Poster). AGU Fall Meeting. Washington DC, December 2018.
- *Thermochemical Evolution of Mantle Plumes Observed Spatially (TEMPOS)* (Poster). AGU Fall Meeting. Washington DC, December 2018.
- *Machine Learning on Infrared Images of Strombolian Eruptions atop Mount Erebus, Antarctica* (Poster). AGU Fall Meeting. Washington DC, December 2018.
- Special Workshop for the 50 years of Yuri Podlatchikov. University of Lausanne. Lausanne, Switzerland, 2014.
- *Organization of the Tectonic Plates in the past 200 Myrs*. American Geophysical Union Fall Meeting. San Francisco, December 2013.
- *Applications of the Multipole Boundary Element Method in Geodynamics*. Mathematical Methods in Geosciences. Padua, Italy, June 2013.

Petculescu, Andi

- *An acoustic approach to assess natural gas quality in real time*. 174th Meeting of the Acoustical Society of America. December 4-8, 2017, New Orleans, LA.
- *Assessing the detectability of thunder from potential cloud-to-ground lightning on Titan: a model based on Cassini-Huygens measurements*. 3rd Workshop on Titan's Past, Present and Future. Johns Hopkins University Applied Physics Laboratory, Laurel, MD, April 8-10, 2014.
- *Molecular acoustics: Theory and applications*. Université de Montréal. Montreal Canada, June 2013.

Petculescu, Gabriela

- *Acoustic Monitoring of Aluminum-Alloy Sensitization*. ASA 174th Meeting, Session 2aPA. New Orleans, December 5, 2017.

Sidorovskaia, Natalia

- *George Ioup's contribution to the Gulf of Mexico acoustic research: paving the path into the future.* 174th Meeting of the Acoustical Society of America. December 4-8, 2017, New Orleans, LA.
- *Passive acoustic monitoring in the Northern Gulf of Mexico using ocean gliders.* 174th Meeting of the Acoustical Society of America. December 4-8, 2017, New Orleans, LA.
- *2000-2017 acoustic research in the Gulf of Mexico: approaches, lessons, and look into the future.* The 42nd IEEE International Conference on Acoustics, Speech and Signal Processing. New Orleans, LA, March 5-9, 2017.
- *Acoustic Assessment of Cetacean Population Responses to the Deepwater Horizon Oil Spill.* 2016 Gulf of Mexico Oil Spill & Ecosystem Science Conference. Tampa, FL, February 1-4, 2016.
- *Assessing the detectability of thunder from potential cloud-to-ground lightning on Titan: a model based on Cassini-Huygens measurements.* 3rd Workshop on Titan's Past, Present and Future. Johns Hopkins University Applied Physics Laboratory. April 2014, Laurel, MD.
- *Molecular acoustics: Theory and applications.* Université de Montréal. Montreal Canada, June 2013.

Whitlow, Harry

- **Whitlow, H.J.**, Banerjee, S., Udegou, H., Deoli, N., deVera, A., Klerks, P.L. *Can we use the invasive Apple Snail Pomacea maculata for biomonitoring of lead contamination in freshwater wetlands?* (Invited). International Conference on Nuclear Microprobe Technology and Applications, Surrey Ion Beam Centre at the University of Surrey. Guildford, England, July 2018.

Colloquia and Seminar Talks

Charilaou, Michalis

- *Dynamic monopoles in ferromagnetic nanoparticles.* Louisiana Consortium for Neutron Scattering. Baton Rouge, October 2018.
- *Magnetization dynamics and emergent fields in ferromagnetic nanoparticles.* Department of Physics Seminar, UL Lafayette. Lafayette, LA, September 2018.

Dent, James B.

- Seminar at the University of New Orleans. New Orleans, LA, April 2016.
- Science Interdisciplinary Monthly Meeting. UL Lafayette. Lafayette, LA, April 2016.
- Seminar speaker at the University of Louisiana at Lafayette, November 2015.
- Invited seminar speaker. LSU. Baton Rouge, LA, April 2015.
- Invited seminar speaker (talk done by phone). Fermilab VHEPP meeting, October 2015
- Invited Seminar on Inflation. University of New Orleans. New Orleans, LA, April 2014.
- Invited Seminar. Arizona State University. Tempe, AZ, November 2013.

- Public Lecture. SMART Festival. Lafayette, LA, October 2013.
- Invited Talk. LSU-S. Shreveport, LA, October 2013.
- Invited Seminar. Vanderbilt University. Nashville, TN, April 2013.

Hollerman, William A.

- *Rockets and Starships: An Overview of Space Travel for the 21st Century*. Louisiana Engineering Society. Lafayette, LA, October 19, 2016.
- *Triboluminescent Materials: Uses in Smart Sensors and Technology*. Department of Physics, Auburn University. Auburn, AL, November 20, 2015.
- *A Research Review of Highly Triboluminescent Europium Tetrakis Dibenzoylmethide Triethylammonium Phosphors*. 61st International Instrumentation Symposium. Huntsville, AL, May 13, 2015.
- *Potential of Using Triboluminescence to Detect Damage or Impacts in Spacecraft*. 61st International Instrumentation Symposium. Huntsville, AL, May 13, 2015.
- *Using Luminescent Materials to Detect Space Radiation*. UL Lafayette Physics Seminar. Lafayette, LA, September 10, 2014.
- *Capabilities of the Louisiana Accelerator Center*. Engineering Directorate, NASA Marshall Space Flight Center (MSFC). Huntsville, AL, April 3, 2013.
- *Effects of Ionizing Radiation on Materials*. Lecture to students in a 600 Level Course in Materials Science/Applied Physics, Department of Physics, Alabama A&M University. Huntsville, AL, February 12, 2013.

Jadhav, Manavi

- *Stardust from Primitive Meteorites*. UL Geosciences Seminar. Lafayette, LA, 2018.
- *Deciphering Isotopic and Elemental Clues in Stardust from Meteorites*. UL Physics Seminar. Lafayette, LA, 2018.

Morra, Gabriele

- *Hierarchical Plate Tectonics and Plate Reorganizations*. Invited Department Seminar, Ludwig Maximilian University of Munich. Munich, Germany, 2016
- Invited department seminar, University of Minnesota in Minneapolis. Minneapolis, MN, 2015.
- Morra, G., Yuen, D.A., Lee, S.M. *Computational Methods for Volcanology: application to Central Asian Volcanism*. 20-minute seminar at the School of Geosciences, University of Wuhan. Hubei, China, June 10, 2015.
- *Fractal Plate Tectonics and Global Plate Reorganizations*. Geosciences Department Seminar, University of Texas at Dallas. Dallas, TX, 2014.
- *Subduction, megathrusts and underwater landslides: What the 2011 Japanese tsunami has taught us about tsunami hazards*. Geosciences Department Lunch Seminar, University of Texas at Dallas. Dallas, TX, 2014.
- *Plate tectonics, megaquakes and underwater landslides: What the 2011 Japanese earthquake taught us about tsunami hazard*. Physics Department Seminar, University of New Orleans. New Orleans, LA, 2014.
- Seminar talk at the Department of Physics, UL Lafayette. Lafayette, LA, September 11, 2013.

Petculescu, Andi

- *Molecular acoustics: Theory and applications*, Invited. Université de Montréal. Montreal, Canada, June 2013.

Petculescu, Gabriela

- *Acoustics: a powerful tool for materials exploration*. Timbuktu Academy, Southern University. Baton Rouge, LA, October 2018
- *Nontraditional uses of resonant ultrasound spectroscopy (RUS)*. ONR Summer Faculty Seminar Series, NSWC-CD. Carderock, MD, August 2018.
- *Acoustics: a powerful tool for materials exploration*. Sciences Interdisciplinary Monthly Meeting Series (SIMM), Ray P. Authement College of Sciences, UL Lafayette. Lafayette, LA, November 21, 2017.
- *Sensitization in aluminum alloys and ultrasonic parameters*. ONR Summer Faculty Program - Seminar Series. NSWC-CD and sister NSWC centers (by broadcast), Carderock, MD, August 8, 2017.
- *Acoustics: a powerful tool for materials exploration*. LA-Tech University Physics Seminar. Ruston, LA, October 2016.
- *Ultrasonic probe for sensitization* (Presentation). ONR and NSWC-CD NDE branch. Carderock, MD, July 16, 2015.
- *Sensitization of Aluminum Alloys - Ultrasound as a Possible Characterization Tool*. ONR Summer Faculty Program - Seminar Series. NSWC-CD and sister NSWC centers (by broadcast), Carderock, MD, July 15, 2015.
- *Elastic Interactions in Ferromagnetic Fe-based Alloys*. ONR Summer Faculty Program - Seminar Series. NSWC-CD and sister NSWC centers (by broadcast), Carderock, MD, July 8, 2014.

Sidorovskaia, Natalia

- **Sidorovskaia, N.A.**, & Veprauskas, A. *Studying the impact of environmental stresses on marine mammals: acoustic monitoring, data analytics, and population models*. LADC-GEMM Consortium, GoMRI Research Webinar. Lafayette, LA, May 30, 2018.
- **Sidorovskaia, N.A.**, & Ackleh, A.S. *Marine Mammal Passive Acoustic Research and Modeling*. Webinar in prep. for Marine Mammal Synthesis Workshop, LADC-GEMM Consortium. October 2018.

Whitlow, Harry J.

- *Potential capabilities for analysis of fuel cell materials with MeV ion beam analysis*. Materials Research Institute Colloquium, UL Lafayette. Lafayette, LA, December 10, 2018
- *Simulating the effect of space radiation using a few MeV energy ion accelerator*. Colloquium, University of North Texas. Denton, TX, November 26, 2018.
- *Ion accelerators in animal based research*. Colloquium, Faculty of Veterinary Technology, Kasetsart University. Bangkok, Thailand, August 12, 2018.
- *Frontier research at the Louisiana Accelerator Center: present and future plans*. Geophysical Lunch, Petroleum Club. Lafayette, LA, May 8, 2018.

- *Frontier research at the Louisiana Accelerator Center: Present and Future Plans.* Department of Physics, UL Lafayette. Lafayette, LA, March 28, 2018.
- *Practical Research Ethics: A Guide for Researchers and Students.* Faculty of Sciences Seminar, Kasetsart University. Bangkok, Thailand, January 10, 2017.
- *From Space Radiation Simulation to Healthier Prawn Sandwiches: Engineering Research Possibilities Using the Louisiana Accelerator Center.* LSU Mechanical Engineering Faculty. Baton Rouge, LA, February 3, 2017
- *Simulating the effect of space radiation using a few MeV ion accelerator.* Nuclear Society of Thailand. January 9, 2017
- *Research in ion beam science and applications from fighting disease to space technology.* Ion Physics colloquium. May 18, 2017

Zhang, Rui

- Colorado School of Mines. Golden, CO, 2018
- University of Chinese Academy of Sciences. Beijing, China, 2018
- Sinopec Houston LLC. Houston, TX, 2016.
- The University of Texas at Austin. Austin, TX, 2015.

Contributed Talks

Charilaou, Michalis

- *Quantitative magnetic analysis of magnetotactic bacteria by means of ferromagnetic resonance spectroscopy.* 6th International Meeting on Magnetotactic Bacteria. Kanazawa, Japan, September 2018.

Hollerman, William A.

- *Using Exotic Materials Like EuD₄TEA to Monitor Damage and Radiation Exposure in Extreme Environments.* 233rd Electrochemical Society Meeting, Solid State Topics General Session. Seattle, WA, May 16, 2018.
- *Europium Tetrakis Dibenzoylmethide Triethylammonium: A Bright Functional.* 8th Energy, Materials, and Nanotechnology (EMN) Meeting. Orlando, FL, November 24, 2014.

Jadhav, Manavi

- *Combined nano-computed tomography and x-ray fluorescence experiments: A powerful, non-destructive technique for in-situ chemical analyses of extraterrestrial materials.* The Geological Society of America 130th Annual Meeting. Indianapolis, IN, November 2018.

Morra, Gabriele

- Morra, G., Tufo, H., Yuen, D.A., Brown, J., Zihao, S. S43A-0836, *Potential Solution of a Hardware-Software System V-Cluster for Big Data Analysis.* Poster, AGU Fall Meeting, New Orleans, LA, December 11-15, 2017.
- Morra, G., Chiaraluce, L., Di Stefano, R., Michele, M., Cambiotti, G., Yuen, D.A., Brunsvik, B. T23F-0689, *Stress and Strain Rates from Faults Reconstructed by*

Earthquakes Relocalization. Poster, AGU Fall Meeting, New Orleans, LA, December 11-15, 2017.

- Gunawardana, P.M., Morra, G. *Deep Earthquakes Spatial Distribution from Numerical Modeling the Stress within a Subducting Lithosphere*. 2016.
- Fischer, B., Morra, G., Petculescu, A. *On Modelling Bubbles in a Magmatic Conduit*. South Central Section, 50th Annual Meeting, Geological Society of America. Baton Rouge, LA, March 2016.
- Conlin, D., Gottardi, R., Morra, G., Spezia, K. *Numerical Modeling of fluid flow and heat transfer in fault systems*. South Central Section, 50th Annual Meeting, Geological Society of America. Baton Rouge, LA, March 2016.
- Goes, S., Fourel, L., Morra, G. Abstract T51B-4629, *Trench Advance by the Subduction of Buoyant Features-Application to the Izu-Bonin-Marianas Arc*. AGU Fall Meeting. San Francisco, CA, December 15-19, 2014.
- Fourel, L., Goes, S.D.B., Morra, G. Abstract T51B-4628, *Contribution of Elasticity in Slab Bending*. AGU Fall Meeting. San Francisco, CA, December 15-19, 2014.
- van Dinther, Y., Gerya, T., Dalguer, L., Mai, M., Corbi, F., Funiciello, F., Morra, G. Abstract 15, 6875, *The seismic cycle on subduction thrusts: a laboratory validation and implications from large-scale geodynamic simulations*. EGU General Assembly Conference. Vienna, Austria, April 7-12, 2013.

Petculescu, Andi

- Trahan, A.J. & Petculescu, A. *Absorption and dispersion of low-frequency sound waves in the main cloud layers of Venus*. 175th Meeting of the Acoustical Society of America. Minneapolis, MN, May 2018.
- Achi, P. & Petculescu, A. *Microphone arrays for efficient communications during long-duration space missions*. 174th Meeting of the Acoustical Society of America. December 4-8, 2017, New Orleans, LA
- Pitre, K. & Petculescu, A. *Infrasound sensing on Mars: Wind noise predictions for a porous dome geometry*. Third Joint Meeting of the Acoustical Society of America and the European Acoustics Association. June 25-29, 2017, Boston, MA.
- *The Physical Acoustics Research Program at the University of Louisiana at Lafayette*. Third Joint Meeting of the Acoustical Society of America and the European Acoustics Association. June 25-29, 2017, Boston, MA.
- *Absorption and Dispersion in Venus' Lower and Middle Atmospheres*. ASA. Pittsburgh, June 2015.

Petculescu, Gabriela

- *Response of ultrasound to aluminum alloys sensitization*. IEEE International Ultrasonics Symposium. Chicago, IL September 4, 2014.
- 2 contributed talks given by collaborators on common projects. 59th MMM Conference. Honolulu, HI, November 2014.
- *A search for new iron-based magnetostrictive materials*. International Workshop on Acoustic Transduction Materials and Devices. State College PA, May 2013.

Sidorovskaia, Natalia

- Li, K., & Sidorovskaia, N.A. *Study of beaked whale's regional habitat use near the Deepwater Horizon oil spill site through passive acoustics*. AGU Fall Meeting. Washington, D.C., December 10-14, 2018
- Sidorovskaia, N., Li, K., Jenkersopn, M., Summerfield, P. *3-dimensional seismic source characterization study*. ESOMM 2018 and E&P Sound & Marine Life Review Meeting. The Hague, The Netherlands, September 2018
- Sidorovskaia, N.A., & Li, K. *Unsupervised clustering approach to classify beaked whale's clicks*. 8th DCLDE Workshop. Paris, France, June 2018.
- Achi, P., Dias, J., Osunkwo, S., Udeogu, H., Zandipour, H., Sidorovskaia, N. *Comparing Five Machine Learning Techniques for the Classification of Odontocete Acoustic Encounters*. 8th DCLDE Workshop. Paris, France, June 2018.
- *Hybrid Method for Estimating Sperm Whale Regional Abundance Using Data from Fixed and Moving Acoustic Sensors*. 2018 Ocean Sciences Meeting. Portland, OR, February 2018.
- Hossain, M.I., Ackleh, A.S., Tang, T., Sidorovskaia, N., & Lee, K. *A new method for estimating the probability of detection of Cuvier beaked whales from passive acoustic data near Gulf of Mexico oil spill site*. Gulf of Mexico Oil Spill & Ecosystem Science Conference 2018. New Orleans, LA, February 5-8, 2018.
- Li, K., Sidorovskaia, N., & Tiemann, C. *Study of sperm whale's long-term abundance trends in the northern Gulf of Mexico*. Gulf of Mexico Oil Spill & Ecosystem Science Conference 2018. New Orleans, LA, February 5-8, 2018.
- Mahmud, S., Sidorovskaia, N., Li, K., Pierpoint, C., & Tiemann, C. *Comparing the Performance of Bottom-moored and Unmanned Surface Vehicle Towed Passive Acoustic Monitoring Platforms for Sperm Whale Studies*. Gulf of Mexico Oil Spill & Ecosystem Science Conference 2018. New Orleans, LA, February 5-8, 2018.
- Pierpoint, C., Sidorovskaia, N., Scala, L., & Comeaux, D. *Towed-hydrophone Surveys of the Northern Gulf of Mexico*. Gulf of Mexico Oil Spill & Ecosystem Science Conference 2018. New Orleans, LA, February 5-8, 2018.
- Mahmud, S., **Sidorovskaia, N.**, Li, K., Pierpoint, C., Tiemann, C., & Mellinger, D.K. *Comparing performance of bottom-moored and unmanned surface vehicle towed passive acoustic monitoring platforms for sperm whale detection*. 174th Meeting of the Acoustical Society of America. December 4-8, 2017, New Orleans, LA
- Li, K., **Sidorovskaia, N.A.**, Tiemann, C., & Ackleh, A. *Decadal assessment of the sperm whale population trends in the northern Gulf of Mexico using acoustics*. 174th Meeting of the Acoustical Society of America. December 4-8, 2017, New Orleans, LA
- Pierpoint, C., Comeaux, D., Scala, L., & **Sidorovskaia, N.** *Towed hydrophones Surveys of the Gulf of Mexico using Unmanned Surface Vehicles*. 22nd Biennial Conference on the Biology of Marine Mammals. Halifax, Nova Scotia, Canada, October 22-27, 2017.
- Tang, T., Ackleh, A.S., **Sidorovskaia, N.**, Li, K., Tiemann, C., & Ioup, J. *Long term impact assessment of the 2010 oil spill impact on deep diving marine mammals: Beaked whales*. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA, February 6-9, 2017.
- Risbourg, J., **Sidorovskaia, N.A.**, Li, K., & Mahmud, S. *Assessing Beaked and Sperm Whale Movement Patterns Using Acoustics and Environmental Characteristics in the*

Northern Gulf of Mexico. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA, February 6-9, 2017.

- Mellinger, D. K., Nieuwkerk, S.L., Heimlich, S.L., Küsel, E.T., Siderius, M., & **Sidorovskaia, N.A.** *Passive Acoustic Monitoring of Cetaceans in the Northern Gulf of Mexico using Ocean Gliders*. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA, February 6-9, 2017.
- Mahmud, S., **Sidorovskaia, N.A.**, Li, K., Pierpoint, C., Tiemann, C., & Mellinger, D.K. *Comparing performance of bottom-moored, glider, and unmanned surface vehicle towed PAM platforms for marine mammal detection*. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA, February 6-9, 2017.
- Li, K., **Sidorovskaia, N.A.**, & Tiemann, C. *Development of detection and classification algorithm based on the feature extraction for beaked whales in the northern Gulf of Mexico*. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA, February 6-9, 2017.
- Ackleh, A.S., Chiquet, R.A., Ma, B., Tang, T., Caswell, H., Veprauskas, A., & **Sidorovskaia, N.** *Analysis of Lethal and Sublethal Impacts of Environmental Disasters on Sperm Whales Using Stochastic Modeling*. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA, February 6-9, 2017.
- Ackleh, A.S., Chiquet, R.A., Ma, B., Tang, T., Caswell, H., Veprauskas, A., & **Sidorovskaia, N.** *Analysis of Lethal and Sublethal Impacts of Environmental Disasters on Sperm Whales Using Stochastic Modeling*. 2017 Joint Mathematics Meetings. January 4-7, 2017, Atlanta, GA.
- **Sidorovskaia, N.**, Li, K., Tiemann, C., Ackleh, A.S., Tang, T., & Risbourg, J. *Gulf of Mexico soundscapes as indicators of ecological stressors*. AGU Fall Meeting, San Francisco, December 12-16, 2016.
- **Sidorovskaia, N.A.** & Li, K. *Development of unsupervised classifier for beaked whale clicks*. 5th Joint meeting of the Acoustical Society of America and the Acoustical Society of Japan. Honolulu, Hawaii, November 28, 2016.
- **Sidorovskaia, N.A.**, Li, K., Tiemann, C., Ackleh, A.S., & Tang, T. *Long-term spatially distributed observations of deep diving marine mammals in the Northern Gulf of Mexico using passive acoustic monitoring*. 5th Joint meeting of the Acoustical Society of America and the Acoustical Society of Japan. Honolulu, Hawaii, November 28, 2016.
- **Sidorovskaia, N.**, Li, K., Tiemann, C.O., Ackleh, A.S., Tang, T., Ioup, G.E., & Ioup, J.W. PO14H-2902: *Long-term Assessment of the 2010 Deepwater Horizon Oil Spill Impact on Deep Diving Marine Mammals*. Ocean Sciences Meeting. New Orleans, LA, February 21-26, 2016.
- Ackleh, A.S., Chiquet, R.A., Ma, B., Tang T., Caswell, H., & **Sidorovskaia, N.** *Assessing the Impact of Environmental Disasters on Population Dynamics Using Stochastic Matrix Models*. LA/MS MAA Conference. February 25-27, 2016, Shreveport, LA.
- Ackleh, A.S., **Sidorovskaia, N.**, Tang, T., Chiquet, R., Ma, B., Tiemann, C., Ioup, W.J., & Ioup, E.G. *Assessment of the 2010 oil spill impact on deep diving marine mammals: beaked whales*. Gulf of Mexico Oil Spill and Ecosystem Conference. Tampa, FL, February 1-4, 2016.

- Ackleh, A.S., Chiquet, R.A., Ma, B., Tang, T., Caswell, H., **Sidorovskaia, N.** *Assessing the Impact of Environmental Disasters on Population Dynamics Using Stochastic Matrix Models*. Gulf of Mexico Oil Spill and Ecosystem Conference. Tampa, FL, February 1-4, 2016.
- **Sidorovskaia, N.**, Li, K., Tiemann, C.O., Ackleh, A., Tang, T., Ioup, G.E., & Ioup, J.W. *Automated Detection and Classification Algorithm for Beaked Whales in the Northern Gulf of Mexico*. Gulf of Mexico Oil Spill and Ecosystem Conference, Tampa, FL, February 1-4, 2016.
- **Sidorovskaia, N.** *Decadal Evolution of the Northern Gulf of Mexico Soundscapes*. Fourth International Conference on the Effects of Noise on Aquatic Life. Dublin, Ireland, July, 2016.
- **Sidorovskaia, N.A.**, Li, K., Tiemann, C.O., Ackleh, A., Tang, T., Ioup, G.E., & Ioup, J.W. OS13A-2024: *Targeted Acoustic Data Processing for Ocean Ecological Studies*. AGU Fall Meeting, San Francisco, December 14-18, 2015.
- **Sidorovskaia, N.A.**, Li, K., Ackleh, A., Tang, T., Tiemann, C.O., Ioup, J.W., & Ioup, G.E. *Classification of beaked whale and dolphin clicks measured by environmental acoustic recording system buoys in the northern Gulf of Mexico*. Meeting of the Acoustical Society of America. Jacksonville, FL, November 02-06, 2015.
- **Sidorovskaia, N.A.** Littoral Acoustic Demonstration Center - Gulf Ecological Monitoring and Modeling (LADC-GEMM): Consortium Introduction 2015 Oil Spill Science Conference. Houston, TX, February 16-19, 2015.
- **Sidorovskaia, N.A.**, Ma, B., Ackleh, A.S., Tiemann, C.O., Ioup, J.W., & Ioup, G.E. OS21C-1155 *Acoustic Studies of the Effects of Environmental Stresses on Marine Mammals in Large Ocean Basins* (Poster). AGU Meeting. San Francisco, CA, December 15-19, 2014.
- Richter, C., Horton, L., Acton, G., **Sidorovskaia, N.A.**, Sierro, F., Xuan, C., & Verosub, K. GP23B-3686 *Relative Geomagnetic Paleointensity, Environmental Magnetism, and Cyclicity of Contourites from the West Iberian Margin (IODP Site U1389)* (Poster). AGU Meeting. San Francisco, CA, December 15-19, 2014.

Journal Referees

Charilaou, Michalis

- Entropy (2018)

Dent, James B.

- Monthly Notices of the Royal Society (2013)
- Astroparticle Physics (2013)

Hollerman, William A.

- Journal of Luminescence (2009-Present)
- IEEE Sensors Journal (2012-Present)
- Journal of Physics D: Applied Physics (2012-Present)
- IEEE Transactions on Nuclear Science (1998-Present)

Jadhav, Manavi

- Meteoritics and Planetary Science

Morra, Gabriele

- Geophysical Journal International
- Editor-in-Chief, AGU Book, “Subduction Dynamics: From Mantle Flow to Mega Disasters”
- Journal of Geodynamics
- Journal of Geophysical Research
- Physics of the Earth and Planetary Interiors
- Earth and Planetary Science Letters
- Acta Geotechnica
- Geoscience Frontiers
- Tectonophysics
- Annuals of Geophysics
- Science
- Tectonics
- Journal of Petrology
- Earth Science Reviews

Petculescu, Andi

- Applied Acoustics
- Proceedings of the Royal Society A
- Sensors & Actuators: B. Chemical
- Journal of the Acoustical Society of America
- Icarus
- Planetary and Space Sciences
- IEEE Sensors

Petculescu, Gabriela

- AIP Advances
- Elsevier, Physica B
- IEEE Transactions on Magnetics
- Journal of Applied Physics
- Journal of Alloys and Compounds
- Journal of the Acoustical Society of America
- Wave Motion
- Europhysics Letters
- Journal of Materials Science
- Nature
- National Science Foundation
- Journal of Magnetism and Magnetic Materials

Sidorovskaia, Natalia

- IEEE Journal of Oceanic Engineering
- Journal of Acoustical Society of America
- Canadian Acoustics Journal
- Physics Essays
- AIP
- PLOS ONE
- Annals of Marine Biology and Research
- McGraw-Hill, Addison Wesley

Whitlow, Harry J.

- Nuclear Instruments and Methods in Physics Research Section B

Zhang, Rui

- Editor, *Geologic and Geophysical Characterization of Ultra-deep Reservoirs, [Special Issue] Interpretation*. 2018
- Deputy Associate Editor, *Interpretation*
- Geophysics
- Petroleum Geosciences
- Journal of Applied geophysics
- International Journal of Greenhouse Gas control
- Journal of Earth Science
- Journal of Natural Gas Science and Technologies
- Journal of Petroleum Science and Engineering

Other

Organized Special Sessions and Conferences

Dent, James B.

- Organizing Committee for the SMART Festival, Lafayette, LA, October 2013.

Hollerman, William A.

- *Developing a Novel Space Radiation Payload for the CAPE-3 CubeSat*, 3rd Planetary CubeSat Science Symposium, Goddard Space Flight Center, Greenbelt, MD, August 17, 2018.
- *New Half Brightness Fluence Measurements for Large-Grained ZnS:Mn, EuD₄TEA, and MnD₄TEA Samples*, 25th International Conference on the Application of Accelerators in Research & Industry, Grapevine, TX, August 13, 2018.
- *Evidence of a Simple Damage Energy Scaling Rule for Proton Irradiation of Luminescent Materials*, 25th International Conference on the Application of Accelerators in Research & Industry, Grapevine, TX, August 13, 2018.
- Meeting Organizer and Host, NASA Academy of Aerospace Quality (AAQ) Expert User Group, October 20, 2014.

Morra, Gabriele

- T11E Subduction Dynamics Across the Scales. Monday, 11 December 2017. 08:00-10:00 New Orleans Ernest N. Morial Convention Center - 211-213.
- T23F Subduction Dynamics Across the Scales Posters. Tuesday, 12 December 2017. 13:40-18:00 New Orleans Ernest N. Morial Convention Center-Poster Hall D-F.
- T12B Subduction Dynamics Across the Scales. Monday, 11 December 2017. 10:20-12:20 New Orleans Ernest N. Morial Convention Center-211-213.
- Organized a session at the GSA 2016. Denver: T220. Physical and Numerical Modeling of Geologic Processes.

Petculescu, Gabriela

- Sound Used as an Investigative Tool for Industrial Solutions. Acoustical Society of America 174th Meeting, New Orleans, Session 2aPA, December 5, 2017.

Sidorovskaia, Natalia

- Marine Mammal Synthesis Workshop, October 30-November 2, 2018, Washington, DC
- Special Sessions in memory of George Ioup. Acoustic research in the Northern Gulf of Mexico. New Orleans, LA, December 4, 2017.
- Gulf of Mexico Acoustic Research. Grand Challenges and Convergence Research Approaches. New Orleans, LA, March 7, 2017. <http://www.ieee-icassp2017.org/acoustics-forum.html>.
- Special session at the GOMOSES conference: Understanding Population Status, Trends and Connectivity of Gulf of Mexico Large Marine Vertebrates as Sentinels for Ecosystem Health in the Context of Restoration. New Orleans, LA, February 7, 2017. <https://event.crowdcompass.com/gomoses2017/activity/4vfVuYRwaa>.
- Fusion of Bio-physical Data and Predictive Modeling to Understand Gulf of Mexico Marine Species Resilience to Environmental Stresses and Disasters. 2016 Oil Spill Science conference, Tampa, Florida, February, 2016.
- Modeling and Observing the Physical-Biological Interactions that Organize the Spatiotemporal Distribution of Biomass in Marine Ecosystems. 2016 Ocean Sciences meeting. New Orleans, LA, February, 2016.

Zhang, Rui

- Session Co-chair, Interpretation Workflows and Techniques. SEG Annual Meeting, 2018

Graduate Student Production**Graduate Students****Dent, James B.**

Chair of the Committee, Master of Science in Physics, UL Lafayette

Alex Sylvester, December 2015

Chase Gaudet, December 2013

Hollerman, William A.

Chair of the Committee, Master of Science in Physics, UL Lafayette
Stephen Williams, Summer 2016

Morra, Gabriele

Chair of the Committee, Master of Science in Physics, UL Lafayette
Jason Cooper, Fall 2017
Brian Fischer, Fall 2017

Member of the Committee, Master of Science in Physics, UL Lafayette
Kyle Coutee, Summer 2018
Henry Udeogu, Fall 2018

Chair of the Committee, Master of Science in Geology, UL Lafayette
Brian Dye, Spring 2018
Alexander Beck, Fall 2017

Member of the Committee, Master of Science in Geology, UL Lafayette
Ian Thomasset, Summer 2018
Daniel Locci, Spring 2018

Petculescu, Andi

Chair of the Committee, Master of Science in Physics, UL Lafayette
Adam Trahan, Fall 2018
Peter Achi, Spring 2018
Kevin Pitre, Spring 2016
Mathbar Raut, Spring 2015
Caleb O'Connor, Summer 2014
Akinjide Akintunde, Spring 2014

Member of the Committee, Master of Science in Physics, UL Lafayette
C. U. Chukwunonye, Spring 2014

Petculescu, Gabriela

Chair of the Committee, Master of Science in Physics, UL Lafayette
Sonny Osunkwo, Fall 2018
Shankar Kharal, Fall 2017
C. U. Chukwunonye, May 2014

Sidorovskaia, Natalia

Chair of the Committee, Master of Science in Physics, UL Lafayette
Sakib Mahmud, Fall 2017
Fatemeh Karbalaei Saleh, Spring 2014

Member of the Committee, Master of Science in Physics, UL Lafayette
Prasanna Gunawardana, Spring 2016
Stephen Williams, Spring 2016

Mathbar Raut, Spring 2016

Whitlow, Harry J.

Chair of the Committee, Master of Science in Physics, UL Lafayette

Henry Udeogu, Fall 2018

Kyle Coutee, Summer 2018

Jay Dias, Spring 2018

Supervised one external Ph.D. student in Chemistry: Jan-July 2018 Completed Ph.D. during 2018.

Zhang, Rui

Chair of the Committee, Master of Science in Geology, UL Lafayette

Joseph E. Morris, Summer 2018

Jude E. Alekhue, Summer 2018

Daniel Locci, Spring 2018

Funding

External Funding

Dent, James B.

- Co-PI with Dr. Hollerman on a \$6000 LYRA award for undergraduate student John Miller, 2015.
- PFUND Grant, \$8050, 2013.

Glass, Gary

- ARRA: MRI-R2: Development of Electrostatic High Energy Focused Ion Beam (HEFIB) Nanoprobe System, National Science Foundation, 2010-2013, \$610,879.

Hollerman, William A.

- *Advanced Models and New Impulse Sources for the X-Ray Transport and Radiation Response Analysis (XTRRA) Toolkit*, 5th Gait Technologies, Incorporated, Subcontract to a Department of the Defense Small Business Technology Transfer (STTR) program for the Department of Defense, \$41,555, Proposal Awarded 2018, Work Complete 2019, Principal Investigator.
- *Rebuilding the Navy Pelletron Accelerator at the Army Research Laboratory in the Capital District*, Links with Industry, Research Centers, and National Labs (LINK), Louisiana Board of Regents, \$4,000, 2018, Principal Investigator.
- Upgrading Particle Induced X-Ray Capabilities at the Louisiana Accelerator Center, Louisiana Board of Regents Support Fund (BORSF), \$29,973, 2016-2017, Co-Principal Investigator.
- Low Energy Nuclear Astrophysics Research for Student John Miller Using the 5SDH-2 Pelletron at the Louisiana Accelerator Center, Louisiana Space Grant (LASPACE) Undergraduate Research Assistantship (LURA), \$6,000, 2015-2017, Principal Investigator.

- Low Energy Nuclear Astrophysics Research for Student John Miller Using the 5SDH-2 Pelletron at the Louisiana Accelerator Center, Louisiana Space Grant (LSPACE) Undergraduate Research Assistantship (LURA), \$6,000, 2015-2016, Principal Investigator.
- Feasibility of EuD₄TEA-Based Sensors to Detect Space Radiation, Louisiana Space Grant (LaSPACE) Consortium, Additional Funds of \$6,500 for Total of \$35,200, 2014-2015, Principal Investigator.
- Feasibility of EuD₄TEA-Based Sensors to Detect Space Radiation, Louisiana Space Grant (LaSPACE) Consortium, \$28,700, 2014-2015, Principal Investigator, Submitted, April 2014, Awarded August 2014.
- Procurement of a First Generation EMCO LabKit Apparatus for, Louisiana Board of Regents Pilot Funding for New Research (PFUND), \$10,000, 2014-2015, Principal Investigator, Submitted April 2014, Awarded August 2014.
- Special Travel for Aerospace Researchers and Students (STARS), Louisiana NASA Experimental Program to Stimulate Competitive Research (EPSCOR), Principal Investigator, 2014.
- Collecting High-Speed Camera Data from Microwave Induced Visible Electroluminescence, Links with Industry. Research Centers, and National Labs (LINK), Louisiana Board of Regents, \$4,000, Principal Investigator, 2014.

Jadhav, Manavi

- UL Travel Grant awarded \$1000, 2018

Meriwether, John

- Forest Hydrology and accretion modeling to evaluate the impacts of Hurricane Sandy. US Geological Survey, Co-PI, \$315,000, 2013-2016.

Morra, Gabriele

- Senior Scientist: 2018 MRI: Acquisition of an AUV system for observations of physical and biogeochemical interactions in the Northern Gulf of Mexico ecosystem (US \$442,000)
- I proposed to the American Geophysical Union to organize workshop associated to the AGU Fall Meeting. AGU approved it and it has been a major success. All the 50 slots were filled with participants and 9 speakers have accepted give a talk. The title of the workshop is: “Innovating the Geosciences: Data Science, Machine Learning and Jupyter,” \$500, 2018.
- As a PI: Gas-magma interaction in a volcanic conduit. proposed to LONI in 2017. Accepted, granted 300,000 computing hours on the LONI supercomputer.
- As a PI: The Physics of the Deepest Subduction Earthquakes. proposed to the Board of Regents, to obtain travel grant to participate to a workshop in Tokyo where I presented a keynote talk. Accepted and Granted for \$1200, 2017.
- A Fast Multipole Approach to Modeling Tsunami Waves. Board of Regents - pFund. \$10,000 (PI), 2014.
- Computational Development of the Fast Multipole. Boundary Element Method for Modeling Three Dimensional Geodynamic Problems, Board of Regents - RCS. \$119,000 (PI), 2014.

Petculescu, Andi

- LaSPACE Subaward 101623 (\$8000) (2018)
- LaSPACE: \$42,000 (2017)
- Infrasound Sensing on Mars Based on Deployable Dome Structures: A Feasibility Study. (Louisiana Space Consortium GSRA Award #101623), \$7,775, 2015.
- Pilot Study for a Distributed Acoustic Interface for Manned Space Habitats Louisiana Space Consortium GSRA Award #101623, \$33,700, awarded in 2015.
- Understanding Infrasound Absorption in the Lower Thermosphere as a Step Toward Quantitative Infrasonic Aeronomy (\$10,000, NSF-EPSCOR: LEQSF 2013-PFUND-339): January 2014-December 2014.
- Understanding Infrasound Absorption in the Lower Thermosphere as a Step Toward Quantitative Infrasonic Aeronomy (BoR/NSF-EPSCOR: LEQSF (2013)-PFUND-339), \$10,000, 2013.

Petculescu, Gabriela

- Ultrasonic-based characterization and model validation of 3D-printed metals. NSF EPSCoR CIMM Seed Funding, January-December, 2018, \$10,000.
- Failure prevention for sensitized structural alloys used in costal transportation. TIRE-DoT, 30K, July 2016-June 2017.
- STEP grant for revitalization of Physics Lab. Computers: \$7,760, funded December 2015.
- Contract: SFRF-ONR, includes \$22,000, laboratory, and summer student, May-July 2015.
- Elastic interactions in solids: A tool for new materials development and improved structural safety. NSF 2015-LINK-99 \$6,000, funded April 2015.
- SFRF - ONR, including \$20,000, laboratory space with instrumentation not available at ULL, samples, and physics student for 10 weeks, May-July 2014.
- Enhanced-Magnetostriction Materials and Iron Stability. NSF 2013-LINK-81, \$6,000, completed September 2014.
- NSF-LINK award NSF 2013-LINK-81, amount \$6,000, 2013.
- ONR Summer Fellowship, total amount \$102,000, 2008-2013.

Sidorovskaia, Natalia

- Bureau of Ocean Energy Management (through HDR): Passive Acoustic Monitoring Program for the Northern Gulf of Mexico, \$367,288, 2018-2019.
- National Science Foundation (MRI): Acquisition of an integrated AUV system for observations of physical and biogeochemical interactions in the Northern Gulf of Mexico, \$456,593, 2018-2019.
- Gulf of Mexico Research Initiative: Littoral Acoustic Demonstration Center – Gulf Ecological Modeling and Monitoring (LADC-GEMM), www.ladcgemm.org, \$680,552, 2018-2019.
- International Association of Oil and Gas Producers, Sound and Marine Life Joint Industry Project: 3-D Source Characterisation Experiment - Data Analysis & Reporting, \$138,415, 2017-2019.

- UL PI: Passive Acoustic Monitoring Program for the Northern Gulf of Mexico, BOEM through HDR, \$326,000 (UL part, total \$2,000,000), 2017-2018
- Littoral Acoustic Demonstration Center (LADC), \$5,238,174; BP/GOMRI, RFP IV (awarded for 2015-2017, Lead PI).
- Development of the Ocean Acoustic Propagation Model for the Louisiana Immersive Technologies Enterprise (LITE) environment. Information Technology Initiative (ITI), UL Lafayette, \$49,164. No Date
- Travel grant from the Russian ministry of education, \$10,000 2012-2013.
- Travel Grant from the organizing committee of the International Conference on The Effects of Noise on Aquatic Life. Budapest, August 11-16, 2013, \$3,000.
- Travel Grant from the American Petroleum Institution \$3,000. 2013.

Zhang, Rui

- U. S. Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, Tuscaloosa Marine Shale Laboratory, 2018-2020, \$9,657,000.00 (CO-PI). Award DE-FE0031575.
- Restore Act Center of Excellence for Louisiana, An evaluation of faulting in Holocene Mississippi river delta strata through the merger of deep 3-D and 2-D seismic data with near surface imaging and measurements of vertical motion at three study areas, Contract Number: CPRA-2015-COE-JE, 2017-2019. Total funding \$349,174.00, ULL subcontract \$75,545.00 (CO-PI).
- Sinopec Tech Houston LLC, Innovative geophysical technology development, 2017-2019, \$240,000 (PI). **Zhang, R.**
- Bureau of Geophysical Prospecting (BGP) Inc, Depth Domain Seismic inversion and wavelet extraction, 2017-2018, \$200,000.00 (PI).
- Department of Energy, Energy Efficiency & Renewable Energy, Integrated Enhanced Geothermal Systems (EGS) Research and Development: Push-pull well testing using CO₂ with active source geophysical monitoring. Control Number: 0842-1554. 2014, total funding \$750,000 ULL subcontract \$54,000.

Awards / Honors

Dent, James B.

- Outstanding Advisor Award from the University of Louisiana at Lafayette, 2015.
- KITP Scholar (Kavli Institute of Theoretical Physics at the University of California at Santa Barbara), 2015.
- The Dr. and Mrs. Sammie W. Coper Endowed Professorship, 2014-2017.
- Blavatnik Award Nominee for UL-Lafayette, 2014.
- Rising Star Award for the College of Sciences, 2014.
- Blavatnik Nominee for UL-Lafayette, 2013.

Hollerman, William A.

- Innovator Award, UL Lafayette Research Office. Completed research as part of the non-burning tracer patent, May 2013.

Morra, Gabriele

- Elected in the Science Steering committee of the CIG (Computational Infrastructure for Geodynamics), the principal organization in world of developers of software for Geodynamics. No Date
- Hensarling/Chapman Endowed Professorship in Geology from the School of Geosciences at UL Lafayette, 2016-2018.

Petculescu, Gabriela

- Office of Naval Research (ONR) Summer Faculty Fellowship Program (SFFP), June-August 2018.
- 2017. Ray P. Authement CoS, UL-L - Outstanding teaching award.
- National award: Office of Naval Research (ONR) Summer Fellowship (SFFP), May-July 2015.
- Office of Naval Research Summer Faculty Research Fellow, at Naval Surface Warfare. Center, West Bethesda MD: 2013, 2015.
- Innovator award - UL Lafayette for academic year 2013-2014.

Sidorovskaia, Natalia

- UL Lafayette Research Excellence Award, 2017.
- Acoustical Society of America Executive Council Certificate in Recognition of Technical Program Chair Contribution, 2017.
- Coca-Cola/BORSF Endowed Professorship, 2014-2020.
- Fellow of the Acoustical Society of America December 2013.

Whitlow, Harry J.

- Recognition of position on RSC, Biosafety and IACUC committees, 2017.

Zhang, Rui

- Best Paper Award in Interpretation, 2018
- John E. and Joretta A. Chance Endowed Professorship in Geology, 2018

Other Professional Activities**Charilaou, Michalis**

- Member of the Ph.D. Committee
 - Lourdes Marcano, University of the Basque Country, Spain, October 2018
 - Dimitrios Koulialias, ETH Zurich, Switzerland, December 2018

Dent, James B.

- TedX speaker at TedX Vermilionville, September 2015 in Lafayette, LA. Youtube: <https://www.youtube.com/watch?v=pFAFepiieIA>
- Memberships:

- Official Member of the Mitchell Institute Neutrino Experiment at a Reactor (MINER).
- Member, American Physical Society.
- Member, American Association of Physics Teachers.

Hollerman, William A.

- Chief advisor and consultant for the Astronaut-Wearable Radiation Meter for Operation in Potential Radiation Environments (ARMOR) payload on the UL Lafayette CAPE-3 satellite. The purpose of ARMOR is to measure radiation exposure using radioluminescence from a polymer containing EuD₄TEA. This payload will be sent into orbit in summer of 2019 from a Virgin Orbit launch system. I am also involved in the development of the CAPE-4 payload that will launch in a few years.
- **CAPE-3 Payload:** Lead investigator for the Astronaut-Wearable Radiation Meter for Operation in Potential Radiation Environments (ARMOR) experiment on the third Cajun Advanced Picosatellite Experiment (CAPE-3) 1U CubeSat. This UL Lafayette-based experiment will use EuD₄TEA as the active element for space radiation sensor and have a UL Lafayette designed Geiger counter for comparison. The construction of this hardware will be finished in Spring 2018 and will be flown in the summer of 2018.
- Memberships
 - American Institute of Aeronautics and Astronautics
 - IEEE Nuclear and Plasma Society
 - International Society for Optical Engineering (SPIE)
 - Sigma Pi Sigma, Physics Honor Society
- Patents
 - R.S. Fontenot, **W.A. Hollerman**, N.A. Guardala, and S.A. Williams, Luminescence-Based Method for Precise Delivery of Ion Beam Therapy, U.S. Patent and Trademark Office (USPTO) Provisional Patent Docket Number 105543 (U.S. Navy), July 13, 2018.
 - **W. A. Hollerman**, N. P. Bergeron, and B. M. Broussard. Hybrid-Luminescent Munition Projectiles. U.S. Patent and Trademark Office (USPTO) Patent Number 8,402,896, March 26, 2013.
- Member of the Ph.D. Committee
 - Noah Bergeron, February 2014, Louisiana Tech University
 - Ross S. Fontenot, May 2013, Alabama A&M University

Jadhav, Manavi

- Memberships
 - Geological Society of America
 - Meteoritical Society

Morra, Gabriele

- Member of the Science Steering Committee (SSC) of the organization Computational Infrastructure for Geodynamics (CIG).

- Member of the Speaker Committee of the Computational Infrastructure for Geodynamics (CIG).
- Organizer of a workshop at AGU fall meeting (already described elsewhere), December 2018.
- Co-editor of [Virtual Special Issue] *Big Data in Geosciences: From Earthquake Swarms to Consequences of Slab Dynamics* (2018). Guest Editors: Robert Geller, Kenji Kawai, Gabriele Morra, David Yuen.
- Memberships
 - American Association of Physics Teachers
 - American Geophysical Union
 - European Geosciences Union
 - Geological Society of America
 - Summer school in Nancy, Ecole National Superior, July 2013

Petculescu, Andi

- Memberships
 - Acoustical Society of America
 - American Physical Society
 - Audio Engineering Society
 - Associate Editor for the Journal of the Acoustical Society of America
 - Co-Editor for JASA's first Special Issue: Acoustic and Related Waves in Extraterrestrial Environments.
 - Reviewer for the *Journal of the Acoustical Society of America*, IEEE Sensors, Sensors and Actuators--Chemical, Measurement Science and Technology, Planetary and Space Sciences
 - Guest Editor for the Special Issue Acoustic and Related Waves in Extraterrestrial Environments. *Journal of the Acoustical Society of America* (2015-Present, Invited).

Petculescu, Gabriela

- Memberships
 - Organizing Committee: Acoustical Society of America 174th Meeting, New Orleans, Session 2aPA, December 5, 2017.
 - Acoustical Society of America.
 - American Physical Society.
 - Sigma Xi, The Scientific Research Society.
 - Research program evaluation for promotion for an outside institution, 2015.
 - National Science Foundation Graduate Research Fellowship Program, January 2015, National Panel Review for proposal review and selection.
 - Patent: System and Methods for Determining the Degree of Sensitization Using an Ultrasonic Sensor, filed September 2, 2014.
 - Part of approved proposal to Oak Ridge National Lab CNMS, ID: CNMS 2014: 256. Project Title: Investigation into the BCC Structure of Iron and its anomalies above 400 K. This grant provides access to the User Nanoscience Research Program at the Center for Nanophase Materials Sciences (CNMS) for one week for our group.

Sidorovskaia, Natalia

- Technical Program Chair for December 2017 ASA Meeting.
- Memberships
 - Southwest Louisiana Geophysical Society
 - Acoustical Society of America;
 - Fellow of the Acoustical Society of America
 - American Geophysical Union
 - Sigma Pi Sigma National Physics Honor Society
 - Active in the Technical Committees on Underwater Acoustics and Signal Processing
 - Participated in organizing the 75th Anniversary meeting of Acoustical Society of America; - Chairing the session at the 75th Anniversary meeting of Acoustical Society of America.
 - Participated in four Technical Program Organizing Meetings for Signal Processing, Underwater acoustics, and Animal Bioacoustics Technical Committees.

Whitlow, Harry J.

- Director of Louisiana Accelerator Center and, since April 2017, de facto acting Vice Director.
- Hosted two international research visitors. Assoc Prof. Wanwisa Sudpraseart and Assoc Prof. Vice Dean Orapin Chienthavorn.
- Supervised 3 undergrad research projects.
- Participated as organizer of delegation for MOU signing ceremonies with Faculty of Sciences Kasetsart University Thailand and Nuclear Society of Thailand.
- Memberships
 - Member of international advisory committee Faculty of Science, Kasetsart University, Thailand.
 - Adjunct prof. in Chemistry, Faculty of Science, Kasetsart University, Thailand. Member of Editorial Advisory Board, Nuclear instruments and Methods Section B
 - Member European Physical Society.
 - Member Svenska Fysikersamfundet (Swedish Physics Society).
 - Co-supervised one MSc in Applied Radiation and Isotopes at Kasetsart University, 2018. One Ph.D. completed, Wimonrut Insuan (external at Kasetsart U. TH) 2017.

Zhang, Rui

- Membership
 - Society of Exploration Geophysics
 - American Geophysical Union
 - European Association of Geoscientists & Engineers

Outreach

Dent, James B.

- Head of and Speaker for the Physics portion of Science Day.
- Member of the College of Sciences Recruitment team.
- Organizer of a teaching workshop for area high school teachers, Summer 2016.
- Talk at Comeaux High School, Spring 2016.
- Talk at Fontainebleau High School, Spring 2016.

Hollerman, William A.

- Louisiana Board of Regents Speaking of Science (SoS):
Rockets and Starships: Overview of Space Travel for the 21st Century:
 - Elton Elementary School, Elton, LA, January 5, 2017
 - St. John Elementary School, Franklin, LA, January 26, 2017.
 - Polaris Engineering SEED Center, McNeese State University, Lake Charles, LA, February 14, 2017.
 - Runnels High School, Baton Rouge, LA, March 13, 2017.
 - Bonnie Ecole Elementary School, Slidell, LA, May 9, 2017.
 - Understanding Wintergreen Candy: Lake Castle Private School, Madisonville, LA, September 12, 2017.
 - Low and Slow Cooking: The Physics of Barbecue: Chef John Folse Culinary Institute, Nicholls State University, Thibodaux, LA, September 20, 2017.
 - Department of Management & Hospitality, University of Louisiana at Lafayette, October 18, 2017.
 - Electricity and Electrical Demonstrations, Paulina Elementary School, Paulina, LA, December 20, 2017.
 - A Trip Through Our Universe, Anacoco Elementary School, Anacoco, LA January 7, 2016.
 - Runnels High School, Baton Rouge, LA, January 11, 2016.
 - Lake Castle Private School, Madisonville, LA, January 12, 2016.
 - Judice Middle School, Duson, LA, February 22, 2016.
 - Holy Family Catholic School, Lafayette, LA, March 15, 2016.
 - Lake Castle Private School, Madisonville, LA, October 26, 2016.
 - The Physics of Barbecue, Kenilworth Science and Technology School, Baton Rouge, November 12, 2016.
 - Joint Math and Science Conference, November 11, 2015.
 - Rockets and Starships. Loranger Elementary School, Loranger, LA April 17, 2015.

Jadhav, Manavi

- Organized a meteorite and Apollo samples exhibit for **Science Day at the University of Louisiana at Lafayette** that was attended by high-school students from Lafayette and neighboring parishes (September 2018)
- Organized a local event for **International Observe the Moon Night** in collaboration with the **Lafayette Natural History Museum** and **Astronomy club** (September 2018)

Morra, Gabriele

- Volunteered as a judge at the Lafayette Science Fair, 2018.
- Part of the Speaking of Science program of the Board of Regents. Presented at the Peabody Montessori School in Alexandria, LA, to talk to fourth-graders about Earthquakes, 2018.

Petculescu, Andi

- Co-organizer of Science Day (2018).
- Volunteer for Preview Day, Junior Day, Scholars' Day (2018).

Petculescu, Gabriela

- Adopt-a-Physicist program, American Physical Society, 2018
- Listen up and get involved. Volunteer - physics demos and mentoring middle-school students from New Orleans area and girl scouts, organized by the Education and Outreach department of the Acoustical Society of America 174th Meeting, New Orleans, Session 2aPA, December 5, 2017.
- Observe the Moon Night (InOMN) at the Lafayette Science Museum - Optics Demonstrations, October 8th, 2016.
- ULL Chem-E Car (held by AIChE) - counsel for kinematic motion with variable acceleration, numerical solutions, 2016.
- National History Day: Marie Curie project - interviewed by student from the Academy of Sacred Heart (won regional and state competition), April 2016.

Sidorovskaia, Natalia

- Speaking of Science, Board of Regents Program, 2018
- Whale's Stories from the Gulf. November 10, 2015 presentation at Lake Castle Madisonville Private School.

Whitlow, Harry J.

- Member of international advisory committee Faculty of Science, Kasetsart University, Thailand, 2017.
- Adjunct prof. in Chemistry, Faculty of Science, Kasetsart University, Thailand, 2017.