Refereed Astrophysics, Plasma Physics, and Computer Science Publications

Notes: the most up-to-date version of this list can be found at my Google Scholar page. For papers published since 2008, papers coming from my research group or where I am the primary senior scientist in terms of intellectual contribution are denoted by an asterisk (*) after my name. Students or postdoctoral researchers working in my research group at the time of paper publication are denoted by a + symbol after their name

114. *Influence of initial conditions on data-driven model identification and information entropy for ideal MHD problems.* G. Vasey+, D. Messenger, D. Bortz, A. Christlieb, **B.W. O'Shea***, 2023, J. Comp. Phys., submitted (arXiv:2312.05339)

113. *The Case for Hot-Mode Accretion in Abell 2029*. D. Prasad+, G.M. Voit, **B.W. O'Shea**, 2023, MNRAS, submitted (arXiv:2311.05704)

112. *Figuring Out Gas & Galaixes in Enzo (FOGGIE) VII: The (Dis)Assembly of Stellar Halos*. A.C. Wright, J. Tumlinson, M.S. Peeples, **B.W. O'Shea**, C. Lochhaas, L. Corlies, B.D. Smith, N. Binh, R. Augustin, R.C. Simons, 2023, ApJ, submitted (arXiv:2309.10039)

111. *The role of radiation and halo mergers in Pop III star formation.* L. Correa Magnus, B.D. Smith, S. Khochfar, **B.W. O'Shea,** J.H. Wise, M.L. Norman, M.J. Turk, 2024, MNRAS, 527, 307

110. *Seeking Self-Regulating Simulations of Idealized Milky Way-Like Galaxies*. C. Kopenhafer+, **B.W. O'Shea***, G.M. Voit, 2023, ApJ, 951, 107

109. *Figuring Out Gas & Galaxies In Enzo (FOGGIE) VI: The Circumgalactic Medium of L* Galaxies is Supported in an Emergent, Non-Hydrostatic Equilibrium*. C. Lochhaas, J. Tumlinson, M.S. Peeples, **B.W. O'Shea**, J.K. Werk, R.C. Simons, J. Juno, C.E. Kopenhafer+, R. Augustin, A.C. Wright, A. Acharyya, B.D. Smith. 2023, ApJ, 948, 43

108. *As a matter of dynamical range – scale-dependent energy dynamics in MHD turbulence.* P. Grete+, **B.W. O'Shea**, K. Beckwith, 2023, ApJ Letters, 942, L34

107. *Memory-efficient emulation of physical tabular data using quadtree decomposition*. J. Carlson+, S. Couch, B.W. O'Shea. 2022, Journal of Computational Science, 64, 101823

106. *Possibilities and Limitations of Kinematically Identifying Stars from Accreted Ultra-faint Dwarf Galaxies*. K. Brauer, H.D. Andales, A.P. Ji, A. Frebel, M.K. Mardini, F.A. Gomez, B.W. O'Shea. 2022, ApJ, 937, 14

105. *KODIAQ-Z: Metals and Baryons in the Cool Intergalactic and Circumgalactic Gas at 2.2<z<3.6.* N. Lehner, C. Kopenhafer+, J. O'Meara, J.C. Howk, M. Fumagalli, J. Prochaska, A. Acharyya, **B.W. O'Shea**, M. Peeples, J. Tumlinson, C. Hummels, 2022, ApJ, 936, 156

104. *Atmospheric Circulation in Simulations of the AGN-CGM Connection at Halo Masses ~$10^{13.5}$ Solar Masses*. D. Prasad+, G.M. Voit, **B.W. O'Shea***, 2022, ApJ, 932, 18

103. *Towards performance portability in the Spark astrophysical magnetohydrodynamics solver in the Flash-X simulation framework.* S.M. Couch, J. Carlson+, M. Pajkos, **B.W. O'Shea**, A. Dubey, T. Klosterman, 2021, Parallel Computing, 108, 102830

102. *Figuring Out Gas & Galaxies In Enzo (FOGGIE). V. The Virial Temperature Does Not Describe Gas in a Virialized Galaxy Halo.* C. Lochhaas, J. Tumlinson, **B.W. O'Shea**, M.S. Peeples, B.D. Smith, J.K. Werk, R. Augustin, R.C. Simons, 2021, ApJ, 822, 121

101. *Some First Stars Were Red: Detecting Signatures of Massive Population III Formation through Long-term Stochastic Color Variations.* T.E. Woods, C.J. Willott, J.A. Regan, J.H. Wise, T.P. Downes, M.L. Norman, B.W. O'Shea, 2021, ApJ Letters, 920, L22

100. *Magnetized Decaying Turbulence in the Compressible Taylor-Green Vortex*. F.W. Glines+, P. Grete+, **B.W. O'Shea***, 2021, Physical Review E, 103, id.043203

99. *External Enrichment of Minihalos by the First Supernovae*. W. Hicks, A. Wells, M.L. Norman, J.H. Wise, B.D. Smith, **B.W. O'Shea**, 2021, ApJ, 909, 70

98. *As a matter of tension -- kinetic energy spectra in MHD turbulence*. P. Grete+, **B.W. O'Shea***, K. Beckwith, 2021, ApJ, 909, 148

97. *K-Athena: a performance portable structured grid finite volume magnetohydrodynamics code*. P. Grete+, F.W. Glines+, **B.W. O'Shea***. 2021, IEEE Transactions on Parallel and Distributed Systems, 32, 1:85-97

96. *Environmental Dependence of Self-regulating Black Hole Feedback in Massive Galaxies*, D. Prasad+, G.M. Voit, **B.W. O'Shea***, F.W. Glines+, 2020, ApJ, 905, 1:50

95. *Tests of AGN Feedback Kernels in Simulated Galaxy Clusters*. F.W. Glines+, **B.W. O'Shea***, G.M. Voit, 2020, ApJ, 901, 2:117

94. *The Formation of Very Massive Stars in Early Galaxies and Implications for Intermediate Mass Black Holes*, J.A. Regan, J.H. Wise, T.E. Woods, T.P. Downes, B.W. O'Shea, M.L. Norman, 2020, The Open Journal of Astrophysics, 3, 1:15

93. *Massive Star Formation in Metal-Enriched Haloes at High Redshift*. J.A. Regan, Z. Haiman, J.H. Wise, **B.W. O'Shea**, M.L. Norman, 2020, The Open Journal of Astrophysics, 3, 1:9

92. *SALSA: A Python Package for Constructing Synthetic Quasar Absorption Line Catalogs from Astrophysical Hydrodynamic Simulations*. B. Boyd+, D. Silvia, **B.W. O'Shea***, J. Tumlinson, M. Peeples, N. Earl, 2020, Journal of Open Source Software, 5, 51:2581

91. *A Black Hole Feedback Valve in Massive Galaxies*. G.M. Voit, G.L. Bryan, D. Prasad, R. Frisbie, Y. Li, M. Donahue, **B.W. O'Shea**, M. Sun, N. Werner, 2020, ApJ, 899, 1:70

90. *The emergence of the first star-free atomic cooling haloes in the Universe*. J.A. Regan, J.H. Wise, **B.W. O'Shea**, M.L. Norman. 2020, MNRAS, 492,2:3021-3031

89. *Cool-Core Cycles and Phoenix*. D. Prasad+, P. Sharma, A. Babul, G.M. Voit, **B.W. O'Shea**. 2020, MNRAS, 495,1:594-599

88. *Figuring Out Gas & Galaxies in Enzo (FOGGIE). IV. The Stochasticity of Ram Pressure Stripping in Galactic Halos.* R.C. Simons, M. Peeples, J. Tumlinson, **B.W. O'Shea**, B.D. Smith, L. Corlies, C. Lochhaas, Y. Zheng, R. Augustin, D. Prasad+, G.F. Snyder, E. Tollerud. 2020, ApJ, 905, 2, 167

87. *Figuring Out Gas & Galaxies in Enzo (FOGGIE). III. The Mocky Way: Investigating Biases in Observing the Milky Way's Circumgalactic Medium.* Y. Zheng, M. Peeples, **B.W. O'Shea**, R.C. Simons, C. Lochhaas, L. Corlies, J. Tumlinson, B.D. Smith, R. Augustin, 2020, ApJ, 896, 143

86. *Figuring Out Gas & Galaxies in Enzo (FOGGIE). II. Emission from the z=3 Circumgalactic Medium*. L. Corlies, M. Peeples, J. Tumlinson, **B.W. O'Shea**, N. Lehner, J.C. Howk, J.M. O'Meara. 2020, ApJ, 896, 125

85. *As a Matter of State: The Role of Thermodynamics in Magnetohydrodynamic Turbulence*. P. Grete+, **B.W. O'Shea**, K. Beckwith, 2020, ApJ, 889, 19

84. *Circumgalactic Pressure Profiles Indicate Precipitation-limited Atmospheres for* $M_* \sim 10^9 - 10^{11.5}\ M_o$. G.M. Voit, M. Donahue, F. Zaheyd, H-W. Chen, J. Werk,G.L. Bryan, **B.W. O'Shea**, 2019, ApJ Letters, 879:1, L1

83. *The Impact of Enhanced Halo Resolution on the Simulated Circumgalactic Medium*. C.B. Hummels, B.D. Smith, P.F. Hopkins, **B.W. O'Shea**, D.W. Silvia, J.K. Werk, N. Lehner, J.H. Wise, D.C. Collins, I.S. Butsky, 2019, ApJ, 882:2, 156

82. *Correlations and Cascades in Magnetized Turbulence*. K. Beckwith, P. Grete+, **B.W. O'Shea**. 2019, IEEE Transactions on Plasma Science, 47:5, 2020

81. *Figuring Out Gas & Galaxies in Enzo (FOGGIE). I. Resolving Simulated Circumgalactic Absorption at* $2 \le z \le 2.5$, M. Peeples, L. Corlies, J. Tumlinson, **B.W. O'Shea**, N. Lehner, J.M. O'Meara, J.C. Howk, N. Earl, B.D. Smith, J.H. Wise, C.B. Hummels. 2019, ApJ, 873, 129

80. *Formation of massive black holes in rapidly growing pre-galactic gas clouds,* J.H. Wise, J.A. Regan, **B.W. O'Shea**, M.L. Norman, T.Pl. Downs, H. Xu, 2019, Nature, 566:7742, 85-88

79. *The Origin of r-process Enhanced Metal-Poor Halo Stars In Now-Destroyed Ultra-Faint Dwarf Galaxies,* K. Brauer, A. Ji, A. Frebel, G. Dooley, F. Gomez, B.W. O'Shea, 2019, ApJ, 871, 247

78. *Metal Mixing and Ejection in Dwarf Galaxies is Dependent on Nucleosynthetic Source*, A. Emerick, G. Bryan, M-M Mac Low, B. Côté [+], K. Johnston, **B.W. O'Shea**, 2018, ApJ, 869, 94

77. *The Growth of Black Holes from Population III Remnants in the Renaissance Simulations*, B.D. Smith, J.A. Regan, T. Downes, M.L. Norman, **B.W. O'Shea**, J.H. Wise, 2018, MNRAS, 480, 3762

76. *As a Matter of Force – Systematic Biases in Idealized Turbulence Simulations*, P. Grete[+], **B.W. O'Shea**[*], K. Beckwith, 2018, ApJL, 858, L19

75. *Descendants of the first stars: the distinct chemical signature of second generation stars*, T. Hartwig, N. Yoshida, M. Magg, A. Frebel, S. Glover, F. Gomez, B. Griffen, M. Ishigaki, A. Ji, R. Klessen, **B.W. O'Shea**, N. Tominaga, 2018, MNRAS, 478, 1795

74. *Selecting ultra-faint dwarf candidate progenitors in cosmological N-body simulations at high redshifts*, M. Safarzadeh, A. Ji, G. Dooley, A. Frebel, E. Scannapieco, F. Gomez, **B.W. O'Shea**, 2018, MNRAS, 476, 5006

73. *Validating Semi-Analytic Models of High-Redshift Galaxy Formation using Radiation Hydrodynamical Simulations*, B. Côté[+], D. Silvia[+], **B.W. O'Shea**[*], B.D. Smith, J.H.Wise, 2018, ApJ, 859, 67

72. *Length scales and turbulent properties of magnetic fields in simulated galaxy clusters*. H. Egan[+], **B.W. O'Shea**[*], E. Hallman, J. Burns, H. Xu, D.C. Collins, H. Li, M.L. Norman, 2016, (arXiv:1601.05083) [note: withdrawn due to referee issues; never resubmitted]

71. *Tracing the First Stars and Galaxies of the Milky Way*, B. Griffen, G. Dooley, A. Ji, **B.W. O'Shea**, F. Gomez, A. Frebel, 2018, MNRAS, 474, 443

70. *First Light – II. Emission line extinction, Population III stars, and X-Ray binaries*. K. Barrow, J. Wise, A. Aykutalp, **B.W. O'Shea**, M.L. Norman, H. Xu. 2018, MNRAS, 474, 2617

69. *Energy transfer in compressible magnetohydrodynamic turbulence*, P. Grete[+], **B.W. O'Shea**[*], K. Beckwith, W. Schmidt, A. Christlieb, 2017, Physics of Plasmas, 24, id.092311

68. *The Second Data Release of the KODIAQ survey*, J. O'Meara, N. Lehner, J.C. Howk, J.X. Prochaska, A.J. Fox, M. Peeples, J. Tumlinson, **B.W. O'Shea**, 2017, AJ, 154, 114

67. *First Light: Exploring the Spectra of High-Redshift Galaxies in the Renaissance Simulations*. K.S. Barrow, J.H. Wise, M.L. Norman, **B.W. O'Shea**, H. Xu. 2017, MNRAS, 469, 4863

66. *Triggering and delivery algorithms for AGN feedback.* G.R. Meece[+], G.M. Voit, **B.W. O'Shea**[*], 2017, ApJ, 841, 133

65. *A Global Model for Circumgalactic and Cluster-Core Precipitation*, G.M. Voit, G. Meece[+], Y. Li, **B.W. O'Shea**, G.L. Bryan, M. Donahue, 2017, ApJ, 845, 80

64. *Advanced LIGO Constraints on Neutron Star Mergers and R-Process Sites*. B. Côté [+], C. Belczynski, C. Fryer, C. Ritter, A. Paul, B. Wehmeyer, **B.W. O'Shea**, 2017, ApJ, 836, 230

63. *The Impact of Modeling Assumptions in Galactic Chemical Evolution Models*. B. Côté [+], **B.W. O'Shea**[*], C. Ritter, F. Herwig, K.A. Venn, 2017, ApJ, 835, 128

62. *GRACKLE: a Chemistry and Cooling Library for Astrophysics.* B.D. Smith, G.L. Bryan, S. Glover, N. Goldbaum, M.J. Turk, J. Regan, J.H. Wise, H.-Y. Schive, T. Abel, A. Emerick, **B.W. O'Shea,** P. Anninos, C. Hummels, S. Khochfar. 2017, MNRAS, 466, 2217

61. *X-ray Background at High Redshifts from Pop III Remnants: Results from Pop III star formation rates in the Renaissance Simulations*. H. Xu, K. Ahn, M.L. Norman, J.H. Wise, **B.W. O'Shea**, 2016, ApJL, 832, 5

60. *The AGORA High-Resolution Galaxy Simulations Comparison Project II. Isolated Disk Test.* The AGORA Collaboration; J.-H. Kim et al. 2016, ApJ, 833, 202

59. *Galaxy Properties and UV Escape Fractions During Epoch of Reionization: Results from the Renaissance Simulations.* H. Xu, J.H. Wise, M.L. Norman, K. Ahn, **B.W. O'Shea**, 2016, ApJ, 833, 84

58. *Mass and metallicity requirements in stellar models for galactic chemical evolution applications.* B. Côté [+], C. West, A. Heger, C. Ritter, **B.W. O'Shea**, F. Herwig, C. Travaglio, S. Bisterzo,

2016, MNRAS, 463, 3755

57. *Late Pop III star formation during the epoch of reionization: Results from the Renaissance Simulations.* H. Xu, M.L. Norman, **B.W. O'Shea**, J.H. Wise, 2016, ApJ, 823, 140

56. *Uncertainties in Galactic Chemical Evolution Models*. B. Côté [+], C. Ritter, **B.W. O'Shea**[*], F. Herwig, M. Pignatari, S. Jones, C. Fryer, 2016, ApJ, 824, 82

55. *The Caterpillar Project: A Large Suite of Milky Way-Sized Halos.* B.F. Griffen, A.P. Ji, G.A. Dooley, F.A. Gomez, M. Volgelsberger, **B.W. O'Shea**, A. Frebel, 2016, ApJ, 818, 10

54. *Tracing the evolution of high redshift galaxies using stellar abundances*. B.D. Crosby[+], **B.W. O'Shea**[*], C. Peruta, T.C. Beers, J. Tumlinson, 2016, ApJ, 818, 10

53. *On the relevance of chaos for halo stars in the stellar neighborhood*. N.P. Maffione, F.A. Gomez, P.M. Cincotta, C.M. Giordano, A.P. Cooper, **B.W. O'Shea**, 2015, MNRAS, 453, 2830

52. *The First Population II Stars Formed in Externally Enriched Mini-halos*. B.D. Smith, J. Wise, **B.W. O'Shea,** M. Norman, S. Khochfar, 2015, MNRAS, 452, 2822

51. *Precipitation-regulated star formation in galaxies*. G.M. Voit, G.L. Bryan, **B.W. O'Shea**, M. Donahue, 2015, ApJ Letters, 808, 30

50. *Cooling, AGN Feedback and Star Formation in Simulated Cool-Core Galaxy Clusters.* Y. Li, G.L. Bryan, M. Ruszkowski, G.M. Voit, **B.W. O'Shea**, M. Donahue, 2015, ApJ, 811, 73

49. *Growth and Evolution of Thermal Instabilities in Idealized Galaxy-Cluster Cores*. G. Meece[+], **B.W. O'Shea**[*], G.M. Voit, 2015, ApJ, 808, 43

48. *Probing the Ultraviolet Luminosity Function of the Earliest Galaxies*. **B.W. O'Shea**[*], J.H. Wise, H. Xu, M.L. Norman, 2015, ApJ Letters, 807, 12

47. *Supernova Sweeping and Black-Hole Feedback in Elliptical Galaxies*. G.M. Voit, M. Donahue, **B.W. O'Shea**, G.L. Bryan, M. Sun, N. Werner, 2015, ApJ Letters, 803, L21

46. *And yet it moves: The dangers of artificially fixing the Milky Way center of mass in the presence of a massive Large Magellenic Cloud.* F.A. Gomez[+], G. Besla, D.D. Carpintero, A. Villalobos, **B.W. O'Shea**[*], E. Bell. 2015, ApJ, 802, 128

45. *Visualizing likelihood density functions via optimal region projection.* H. Canary, R.M. Taylor, C. Quammen, S. Pratt, F.A. Gomez[+], **B.W. O'Shea**, C.G. Healey, 2014, Computers & Graphics, 41, 62-71

44. *Scaling Relations for Galaxies Prior to Reionization.* P. Chen, J.H. Wise, M.L. Norman, H. Xu, **B.W. O'Shea**. 2014, ApJ, 795, 144

43. *Software Abstractions and Methodologies for HPC Simulation Codes on Future Architectures*, A. Dubey, S. Brandt, R. Brower, M. Giles, P. Hovland, D.Q. Lamb, F. Loffler, B. Norris, **B.W. O'Shea**, C. Rebbi, M. Snir, R. Thakur, P. Tzeferacos. 2014, Journal of Open Research Software, 2(1):e14

42. *Heating the Intergalactic Medium by X-rays from Population III Binaries in High-redshift Galaxies.* H. Xu, K. Ahn, J.H. Wise, M.L. Norman, **B.W. O'Shea**, 2014, ApJ, 791, 110

41. *A survey of High Level Frameworks in Block-Structured Adaptive Mesh Refinement Packages.* A. Dubey, A. Almgren, J. Bell, M. Berzins, S. Brandt, G. Bryan, P. Colella, D. Graves, M. Lijewski, F. Loffler, **B. W. O'Shea**, E. Schnetter, B. Van Straalen, K. Weide, 2014, Journal of Parallel and Distributed Computing, July 15. (arXiv:1610.08833)

40. *Bringing simulation and observation together to better understand the IGM.* H. Egan[+], B.D. Smith[+], **B.W. O'Shea**[*], and J.M. Shull, 2014, ApJ, 791, 64

39. *Dissecting galaxy formation models with sensitivity analysis – A new approach to constrain the Milky Way formation history.* F. Gomez[+], C. Coleman-Smith, **B.W. O'Shea**[*], J. Tumlinson, R. L. Wolpert. 2014, ApJ, 787, 20

38. *Visualizing Likelihood Density Functions by Optimal Surface Projection.* H. Canary, R.M. Taylor,

C. Quammen, S. Pratt, F.A. Gomez+, **B.W. O'Shea**, C.G. Healey, 2014, Computers and Graphics, 41, 62-71

37. *Fragmentation in dusty low-metallicity star forming halos*. G. Meece+, B.D. Smith+, **B.W. O'Shea***. 2014, ApJ, 783, 75

36. *The AGORA High-Resolution Galaxy Simulations Comparison Project.* J.-H. Kim et al. for The AGORA Collaboration (List of 46 authors alphabetized after first author; I am #29). 2014, ApJS, 210, 14

35. *Enzo: An adaptive mesh refinement code for astrophysics*. The Enzo Collaboration: G.L. Bryan, M.L. Norman, **B.W. O'Shea**, et al. (28 authors total). 2014, ApJS, 211, 19

34. *Software abstractions and methodologies for HPC simulation codes on future architectures.* A. Dubey, S. Brandt, R. Brower, M. Giles, P. Hovland, D.Q. Lamb, F. Loffler, B. Norris, **B. O'Shea**, C. Rebbi, M. Snir, R. Thakur. 2014, Supercomputing 2014. (Note: position paper for the "Workshop on Sustainable Software in Science: Practice and Experiences.") (arXiv:1309.1780)

33. *Cosmological simulations of isotropic conduction in galaxy clusters*. B.D. Smith+**, B.W. O'Shea***, G.M. Voit, D. Ventimiglia, S. W. Skillman, 2013, ApJ, 778, 152.

32. *Population III star formation in large cosmological simulations, I: Halo temporal and physical environment.* B.D. Crosby+, **B .W. O'Shea*,** B.D. Smith+, M.J. Turk, O. Hahn, 2013, ApJ, 773, 108

31. *Cosmological magnetohydrodynamic simulations of galaxy cluster radio relics: insights and warnings for observations.* S. Skillman+, H. Xu, E. Hallman, **B.W. O'Shea***, J. Burns, H. Li, D. Collins, and M.L. Norman. 2013, ApJ, 765, 21

30. *Vertical density waves in the Milky Way disc induced by the Sagittarius dwarf galaxy*. F. Gomez+, I. Minchev, **B.W. O'Shea***, T.C. Beers, J. Bullock, and C. Purcell. 2013, MNRAS, 429, 159-164

29. *On the Road to More Realistic Galaxy Cluster Simulations: the Effects of Radiative Cooling and Thermal Feedback Prescriptions on the Observational Properties of Simulated Galaxy Clusters.* S. Skory, E. Hallman, J. Burns, S. Skillman, **B.W. O'Shea**, and B.D. Smith. 2013, ApJ, 763, 38

28. *Characterizing the Formation History of Milky Way-like Stellar Halos with Model Emulators.* F. Gomez+, C. Coleman-Smith, **B.W. O'Shea***, J. Tumlinson, and R. Wolpert. 2012, ApJ, 760, 112

27. *Signatures of minor mergers in the Milky Way disc – I. The SEGUE stellar sample.* F. Gomez+, I. Minchev, **B.W. O'Shea***, Y.L. Lee, T. Beers, K.An, J. Bullock, C. Purcell, and A. Villalobos. 2012, MNRAS, 423, 3727.

26. *A study of Physical-Science Ensemble Visualization Needs.* G. Taylor et. al. (21 authors total, I am 14th). 2012, in the Proceedings of the 2012 IEEE VisWeek Conference (peer-reviewed conference proceeding)

25. *Signatures of minor mergers in Milky Way-like disk kinematics: ringing revisited,* Gomez, F. +, Minchev, I., Villalobos, A., **O'Shea, B.W.** *, Williams, M., 2012, MNRAS, 419, 2163

24. *Galaxy cluster radio relics in adaptive mesh refinement cosmological simulations: Relic properties and scaling relationships*. Skillman, S. +, Hallman, E., **O'Shea, B.W.** *, Burns, J., Smith, B.D. & Turk, M.J. 2011, ApJ, 735, 96

23. *The Nature of the Warm-Hot Intergalactic Medium, I: Numerical Methods, Convergence, and OVI Absorption*, Smith, B.D., Hallman, E.J., Shull, J.M., and **O'Shea, B.W.** 2011, ApJ, 731, 6

22. *The Properties of X-ray Cold Fronts in a Statistical Sample of Simulated Galaxy Clusters*, Hallman, E.J., Skillman, S.W., Jeltema, T., Smith, B.D., **O'Shea, B.W.**, Burns, J.O. & Norman, M.L. 2010, ApJ, 725, 1053

21. *Galaxy Clusters at the Edge: Temperature, Entropy and Gas Dynamics at the Virial Radius*, Burns, J.O., Skillman, S.,W., & **O'Shea, B.W.** 2010, ApJ, 721, 1105-1112

20. *On the Origin of the Highest Redshift Gamma-Ray Burst, GRB 080913*, Belczynski, C., Hartmann, D.H., Fryer, C.L., Holz, D.E. & **O'Shea, B.W.** 2010, ApJ, 708, 117-126

19. *The Formation of Population III Binaries from Cosmological Initial Conditions*, Turk, M., Abel, T. & **O'Shea, B.W.** 2009, Science, 325, Issue 5940, pp. 601-604

18. *The Santa Fe Light Cone Simulation Project, II: The Prospects for Direct Detection of the WHIM with SZE Surveys*, Hallman, E. J., **O'Shea, B.W.**, Smith, B.D., Burns, J.O., & Norman, M.L. 2009, ApJ, 698, 1795-1802

17. *Dark Matter Annihilation and Primordial Star Formation*, Natarajan, A., Tan, J.C., & **O'Shea, B.W.** 2009, ApJ, 692, 574

16. *Three modes of Metal-enriched star formation at high redshift,* Smith, B., Sigurdsson, **O'Shea, B.W.,** & Norman, M.L., 2009, ApJ, 681, 441-451

15. *The Biermann Battery in Cosmological MHD Simulations of Population III Star Formation*, Xu, H., **O'Shea, B.W.,** Collins, D.C., Norman, M.L., Li, H. & Li, S. 2008, ApJ, 688, L57

14. *Cosmological Shocks in Adaptive Mesh Refinement Simulations and the Acceleration of Cosmic Rays,* Skillman, S.W., **O'Shea, B.W.,** Hallman, E.J., Burns, J.O., & Norman, M.L. 2008, ApJ, 689, 1063

13. *The Destruction of Cosmological Halos by Primordial Supernovae*, Whalen, D., Van Veelen, R., **O'Shea, B.W.**, & Norman, M.L., 2008, ApJ, 682, 49

12. *How the First Stars Regulated Local Star Formation I: Radiative Feedback*, Whalen, D., **O'Shea, B.W.**, Smidt, J. & Norman, M.L., 2008, ApJ, 679, 925

11. *Population III Star Formation in a Lambda CDM Universe, II: Effects of a photodissociationg background*, **O'Shea, B.W.** & Norman, M.L., 2008, ApJ, 673, 14

10. *The Cosmic Code Comparison Project*, Heitmann, K., Lukic, Z., Fasel, P., Habib, S., Warren, M.S., White, M., Ahrens, J., Ankeny, L., Armstrong, R., **O'Shea, B.W.**, Ricker, P.M., Springel, V., Stadel, J., & Trac, H., 2008, Computational Science and Discovery, Volume 1, Article 015003

9. *The Santa Fe Light Cone Simulation Project: I. Confusion and the WHIM in upcoming Sunyaev-Zel`Dovich Effect Surveys*, Hallman, E.J., **O'Shea, B.W.**, Burns, J.O., Norman, M.L., Harkness, R. & Wagner, R., 2007, ApJ, 671, 27-39

8. *Population III Star Formation in a Lambda CDM Universe, I: Effect of Environment on Protostellar Accretion Rates*, **O'Shea, B.W.** & Norman, M.L., 2007, ApJ, 654, 66

7. *Population III Star Formation in a Lambda WDM Universe*, **O'Shea, B.W.** & Norman, M.L., 2006, ApJ, 648, 31

6. *CMB Polarization Due to Scattering in Clusters*, Shimon, M., Rephaeli, Y., **O'Shea, B.W.**, & Norman, M.L., 2006 MNRAS, 368, 511-517

5. *Comparing AMR and SPH Cosmological Simulations, I: Dark Matter & Adiabatic Simulations*, **O'Shea, B.W.**, Nagamine, K., Springel, V., Hernquist, L. & Norman, M.L., 2005, ApJS, 160, 1

4. *Forming a Primordial Star in a Relic HII Region*, **O'Shea, B.W.**, Abel, T., Whalen, D. & Norman, M.L., 2005, ApJ, 628, L5

3. *A Concordance Model of the Lyman-Alpha Forest at z = 1.95*, Jena, T., Norman, M.L., Tytler, D., Kirkman, D., Suzuki, N., Chapman, A., Melis, C., So, G., **O'Shea, B.W.**, Lin, W., Lubin, D., Paschos, P., Reimers, D., Janknecht, E., Fechner, C., 2005, MNRAS, 361, 70

2. *Did Massive Primordial Stars Preenrich the Lyman Alpha Forest?*, Norman, M.L., **O'Shea, B. W.**, & Paschos, P., 2004, ApJ, 601, L115-118

1. *Baryons in the Warm-Hot Intergalactic Medium*, Dave, R., Cen, R., Ostriker, J.P., Bryan, G.L., Hernquist, L., Katz, N., Weinberg, D.H., Norman, M.L. & **O'Shea, B. W,** 2001, ApJ, 552, 473-483

Refereed Education Research Publications

5. *A Learner-Centered Approach to Teaching Computational Modeling, Data Analysis, and Programming*, D. Silvia, **B.W. O'Shea**, B. Danielak, 2019, Proceedings of the International Conference on Computational Science – ICCS 2019, pp. 374-388

4. *Promoting interdisciplinary through climate change education.* A. McCright, **B.W. O'Shea**,

R. Sweeder, G. Urquhart, and A.K. Zeleke. 2013, Nature Climate Change, DOI: 10.1038/NCLIMATE1844.

3. *From F=ma to flying squirrels: Curricular change in an introductory physics course.* **B.W. O'Shea**, L. Terry, and W. Benenson. 2013, CBE-Life Science Education, 12, 230-238 (ADS link)

2. *Assessing gender differences in response system questions for an introductory physics course,* Richardson, C. & **O'Shea, B.W.,** 2013, American Journal of Physics, 81, 231

1. *Tutorials in Physics: The pain and the gain,* Cruz, E., **O'Shea, B.W.**, Schaffenberger, W., Wolf, S., & Kortemeyer, G., 2010, The Physics Teacher, 48, 453-457

Conference Proceedings, Research Notes, and Book Chapters

23. Analyzing Star Formation Feedback Mechanisms in Cosmological Simulations, S.T. Fush+, **B.W. O'Shea**, D.W. Silvia, B.D. Smith, J.H. Wise. 2022, Research Notes of the AAS, 6, 38

22. *Halo Environment for Population III Star Formation*, J. Grace+, **B.W. O'Shea**, & J.H. Wise, 2020, Research Notes of the AAS, 4, 6

21. *FRIB and the GW170817 Kilonova*, A. Aprahamian et al., proceedings for the FRIB Theory Alliance Workshop "FRIB and the GW170817 Kilonova," held 16-27 July 2018 (arXiv:1809.00703)

20. *JINA-NuGrid Galactic Chemical Evolution Pipeline*, B. Cote, C. Ritter, F. Herwig, **B.W. O'Shea**, M. Pignatari, D. Silvia, S. Jones, C. Fryer, 2017, in Proceedings of Nuclei in the Cosmos XIV, id.020203

19. *The formation of the first second generation star.* B.D. Smith, J.W. Wise & **B.W. O'Shea**. 2012, in Proceedings of First Stars IV – From Hayashi To The Future, AIP Conference Proceedings #1480, pp. 135-138

18. *Probing the formation of the Milky Way.* **B.W. O'Shea**, F. Gomez, C. Coleman-Smith, I. Minchev, J. Tumlinson, Y.S. Lee, and T. Beers. 2012, in Galactic archaeology: Near-field cosmology and the formation of the Milky Way. Proceedings of the conference held 16-20 May 2011 in Shuzenji, Japan. Astronomical Society of the Pacific Conference Proceedings, Vol. 458

17. *Vertical density waves in the Milky Way induced by the Sagittarius dwarf galaxy.* F. Gomez, I. Minchev, **B.W. O'Shea**, T. Beers, J. Bullock and C. Purcell. 2012, in Proceedings of the Argentina Astronomical Association, Vol. 55

16. *Characterizing the formation history of Milky Way-like stellar halos with model emulators.* F. Gomez, C. Coleman-Smith, **B.W. O'Shea**, J. Tumlinson, and R. Wolpert. 2012, in "Proceedings of the Argentina Astronomical Association, Vol. 55

15. *Protostellar Feedback Processes and the Mass of the First Stars*, Tan, J.C., Smith, B.D., & **O'Shea, B.W.,** in Proceedings of The First Stars and Galaxies: Challenges for the Next Decade, Eds. D. Whalen, V. Bromm & N. Yoshida, 2010, AIP conference proceedings series.

14. *Local and Global Radiative Feedback from Population III Star Formation*, **O'Shea, B.W.** & Whalen, D. in Proceedings of The First Stars and Galaxies: Challenges for the Next Decade, Eds. D. Whalen, V. Bromm & N. Yoshida, 2010, AIP conference proceedings series.

13. *Population III Binary Formation*, Turk, M., Abel, T., Norman, M.L. & **O'Shea, B.W.** in Proceedings of The First Stars and Galaxies: Challenges for the Next Decade, Eds. D. Whalen, V. Bromm & N. Yoshida, 2010, AIP conference proceedings series.

12. *Towards More Realistic Simulations of Galaxy Clusters: Shocks and Radio Relics*, Skillman, S.,W., O'Shea, B.W., Hallman, E.J. & Burns, J.O. Proceedings of The Monster's Fiery Breath: Feedback in Galaxies, Groups and Clusters, Eds. S. Heinz & E. Wilcots, 2009, AIP conference proceedings series #1201, pp. 334-341

11. *Population III Supernovae and the Assembly of the First Galaxies*, Whalen, D.W., Van Veelen, B., **O'Shea, B.W.**, & Norman, M.L., Proceedings of IAUS #255: Low Metallicity Star Formation: from the First Stars to the First Galaxies, Eds. L.K. Hunt, S. Madden, & R. Schneider, 2008 (arXiv: 0808.0524)

10. *First Stars III Conference Summary*, **O'Shea, B.W.**, McKee, C., Heger, A., & Abel, T. In Proceedings of First Stars III, Eds. B. O'Shea, A. Heger & T. Abel, 2008, AIP conference proceedings series #990, pp. xiii-xxiii

9. *Toward Forming a Primordial Star in a Cosmological AMR Simulation*, Turk, M., Abel, T., & **O'Shea, B.W.** In Proceedings of First Stars III, Eds. B. O'Shea, A. Heger & T. Abel, 2008, AIP conference proceedings series #990, pp. 16-20

8. *The Role of the First Metals in Forming the Second Stars*, Smith, B., Sigurdsson, S., **O'Shea, B.W.** & Norman, M.L. In Proceedings of First Stars III, Eds. B. O'Shea, A. Heger & T. Abel, 2008, AIP conference proceedings series #990, pp. 73-75

7. *Photoionization of Clustered Halos by the First Stars*, Whalen, D. , **O'Shea**, **B.W.**, Smidt, B. & Norman, M.L. In Proceedings of First Stars III, Eds. B. O'Shea, A. Heger & T. Abel, 2008, AIP conference proceedings series #990, pp. 381-385

6. *Simulating Cosmological Evolution with Enzo*, Norman, M.L., Bryan, G., Harkness, R., Border, J., Reynolds, D. **O'Shea, B.W.**, Wagner, R. In Petascale Computing: Algorithms and Applications, Ed. David Bader, CRC Press, 2007

5. *AMR simulations of the Cosmological Light Cone: SZE Surveys of the Synthetic Universe*, Hallman, E.J., **O'Shea, B.W.**, Norman, M.L., Wagner, R., and Burns, J.O. In Proceedings of Heating vs. Cooling in Galaxies and Clusters of Galaxies, MPA/ESO/MPE/USM Joint Astronomy Conference, Eds. H. Boehringer, P. Schuecker, G.W. Pratt & A. Finoguenov, Springer-Verlag, 2007

4. *Forming a Primordial Star in a Relic HII Region*, **O'Shea, B.W.,** Abel, T., Whalen, D. & Norman, M.L. In Proceedings of the International Astronomical Union Symposium 228 – From Lithium to Uranium: Elemental Tracers of Early Cosmic Evolution, Eds. V. Hill, P. Francois & F. Primas, Cambridge University Press, 2005

3. *Introducing Enzo, an AMR Cosmology Application*, **O'Shea, B.W.,** Bryan, G., Bordner, J., Norman, M.L., Abel, T., Harkness, R. & Kritsuk, A. In Adaptive Mesh Refinement – Theory and Applications, Eds. T. Plewa, T. Linde & V.G. Weirs, Springer Lecture Notes in Computational Science and Engineering, 2004

2. *Towards Optimizing Enzo, an AMR Cosmology Application*, Bordner, J., Bryan, G., Harkness, R., Kritsuk, A., Norman, M.L. & **O'Shea, B.W.** In Adaptive Mesh Refinement – Theory and Applications, Eds. T. Plewa, T. Linde & V.G. Weirs, Springer Lecture Notes in Computational Science and Engineering, 2004

1. *Studying Dark Energy with Galaxy Cluster Simulations*, Mohr, J., **O'Shea, B.W.**, Evrard, A., Bialek, J. & Haiman, Z. in Proceedings of Dark Matter 2002

Review Articles, White Papers and Technical Reports

14. Horizons: Nuclear Astrophysics in the 2020s and Beyond, H. Schatz et al. 2022, Journal of Physics G, 49, id.110502

13. Cyberinfrastructure Requirements to Enhance Multi-messenger Astrophysics. P. Chang et al. 2019. Astro2020 white paper (arXiv:1903.04590)

12. Understanding the circumgalactic medium is critical for understanding galaxy evolution. M. Peeples et al. 2019. Astro2020 white paper (arXiv:1903.05644)

11. *Catching Element Formation In The Act ; The Case for a New MeV Gamma-Ray Mission: Radionuclide Astronomy in the 2020s*. F.X. Timmes et al. (100+ authors total). 2019. Astro2020 white paper (arXiv:1902.02915)

10. *Circumgalactic Gas and the Precipitation Limit*. Voit, G. M., Babul, A., Babyk, Iu., Bryan, G. L., Chen, H. -W., Donahue, M., Fielding, D., Gaspari, M., Li, Y., McDonald, M., **O'Shea, B. W**., Prasad, D., Sharma, P., Sun, M., Tremblay, G., Werk, J., Werner, N., Zahedy, F. 2019. Astro2020 white paper (arXiv:1903.11212)

9. *r-Process Nucleosynthesis: Connecdting Rare-Isotope Beam Facilities with the Cosmos*, C.J. Horowitz et al., 2018, submitted to Journal of Physics G (arXiv:1805.04637)

8. *The Importance of Computation in Astronomy Education*, M. Zingale, F.X. Timmes, R. Fisher,

B.W. O'Shea, submitted to the AAS Education Taskforce Call, June 2016 (arXiv:1606.02242)

7. *ASCR/HEP Exascale Requirements report.* S. Habib et al., community report for the ASCR/HEP Exascale Requirements Review meeting held in June, 2015 (arXiv:1603.09303)

6. *White paper on nuclear astrophysics,* A. Arcones et al., community white paper based on 2012 JINA Town Meeting in Detroit, MI and 2014 APS Town Meeting in College Station, TX. Lead author: H. Schatz, Michigan State University (arXiv:1603.02213)

5. *Snowmass Computing Frontier: Computing for the Cosmic Frontier, Astrophysics, and Cosmology.* A. Connolly, S. Habib, A. Szalay, J. Borrill, G. Fuller, N. Gnedin, K. Heitmann, D. Jacobs, D. Lamb, T. Mezzacappa, B. Messer, S. Myers, B. Nord, P. Nugent, **B.W. O'Shea**, P. Ricker, M. Schneider. 2013. Snowmass working group report. (arXiv:1311.2841)

4. *Dissecting the Epoch of Reionization with Discrete, Embedded Sources.* White Paper for the 2010 Astronomy Decadal Review. Lead author: Jason Prochaska, UC Santa Cruz. 2009 (ADS link)

3. *Tracing the cosmic star formation history to its beginnings: Gamma ray bursts as tools*. White Paper for the 2010 Astronomy Decadal Review. Lead author: Dieter Hartmann, Clemson U. 2009 (ADS link)

2. *Nuclei in the cosmos.* White Paper for the 2010 Astronomy Decadal Review. Lead author: Ed Brown, MSU. 2009 (ADS link)

1. *First light sources at the end of the dark ages: Direct observations of Pop III stars, proto-galaxies, and supernovae during the reionization epoch.* White Paper for the 2010 Astronomy Decadal Review. Lead authors: Jeff Cooke and Asantha Cooray, UC Irvine. 2009 (ADS link)

Invited Conference Talks, Seminars, and Colloquia

2023:

1. Oases in the Cosmic Desert, Tempe, AZ, Feb. 21-24, 2023
2. Enzo/Enzo-E Collaboration Meeting, San Diego, CA, May 8-11, 2023
3. Joint Institute for Nuclear Astrophysics meeting, East Lansing, MI, May 21-25, 2023
4. Festschrift for Michael Norman, Kloster Seeon, Seeon-Seebruck, Germany, June 6-9, 2023

2022

1. JINA Frontiers Workshop, May 2022
2. Sandia Z Fundamental Science Workshop, August 2022
3. University of Notre Dame astrophysics seminar, November 2022

2021

1. PASC21 Conference (virtual), July 2021
2. PICUP Virtual Capstone Conference (keynote speaker; virtual), August 2021
3. IEEE HPEC Conference (virtual), September 2021

2020:

1. Bates College Physics Colloquium, February 2020
2. JINA Galactic Chemical Evolution Workshop, March 2020
3. Where the Star Formation Ends, Leiden, the Netherlands, April 2020 (CANCELLED – COVID)
4. Plenary speaker, PICUP Capstone Conference, Grand Rapids, MI, July 2020 (CANCELLED – COVID)
5. ASTRONUM-2020, Pasadena, CA, July 2020 (CANCELLED – COVID)

2019:

1. Florida State University Physics Colloquium, January 2019
2. Physics and astrophysics of the intracluster medium, Budapest, Hungary, March 2019
3. Galaxy formation seminar, Johns Hopkins University, April 2019
4. Fundamental Science with Pulsed Power meeting, hosted by Sandia National laboratories, August 2019
5. Notre Dame Astrophysics Seminar, September 2019
6. Notre Dame Physics Colloquium, September 2019
7. Oakland University Physics Colloquium, October 2019

2018:

1. University of Oregon Institute for Theoretical Science Colloquium, January 2018
2. Oregon State University Physics Colloquium, January 2018
3. University of Washington in Seattle Astronomy Colloquium, January 2018
4. Blue Waters Symposium, June 2018 (one review talk, one invited science talk)
5. AstroNum 2018, June 2018
6. University of Alabama Physics Colloquium, October 2018
7. Argonne National Lab Computational Science colloquium, October 2018
8. Northwestern University CIERA colloquium, October 2018
9. University of Minnesota Astrophysics colloquium, November 2018

2017:

1. SIAM Computational Science and Engineering meeting, Atlanta, February 2017
2. Boston College Physics Colloquium, April 2017
3. Central Michigan University Fall Equinox seminar, September 2017
4. University of Waterloo Astronomy Colloquium, October 2017
5. University of Toronto CITA Colloquium, October 2017
6. UC Berkeley Institute for Theory and Computation seminar, November 2017
7. Stanford KIPAC seminar, November 2017
8. Space Telescope Science Institute Galaxies seminar, December 2017

2016:

1. UC San Diego Astrophysics Seminar, February 2016
2. UC Irvine Astronomy Colloquium, February 2016
3. University of Colorado at Boulder JILA seminar, March 2016
4. Yale Center for Astronomy and Astrophysics Seminar, April 2016
5. Los Alamos National Lab LA-Astro seminar, May 2016
6. JINA R-process workshop, June 2016
7. Blue Waters symposium, June 2016
8. HAWC collaboration meeting (review), July 2016
9. ICM Plasma Physics Workshop, August 2016
10. SUNY Stonybrook Physics Colloquium, September 2016

2015:

1. Florida State University Physics Colloquium, February 2015
2. Arizona State University cosmology seminar, February 2015
3. U. Illinois (Urbana-Champaign) Astronomy Colloquium, March 2015
4. NCSA Director's Colloquium, March 2015
5. U. Michigan Galaxy Cluster seminar, April 2015
6. APS April Meeting, D. Comp. Phys. Invited talk, April 2015
7. U. Michigan Astronomy Colloquium, April 2015
8. U. Michigan Education Research seminar, April 2015
9. NCSA Blue Waters Symposium, May 2015
10. U. Victoria Nucleosynthesis Symposium, May 2015
11. NC State Physics Colloquium, November 2015

2014:

1. Notre Dame Circumgalactic Medium workshop, January 2014
2. UC Irvine Near Field/Far Field Connection conference, February 2014
3. U. Wisconsin Astronomy Colloquium, March 2014
4. Blue Waters Symposium, UIUC, May 2014
5. Quenching & Quiescence Conference, Heidelberg, July 2014
6. Intracluster medium theory and simulation workshop, Copenhagen, August 2014
7. HEP/astrophysics seminar, U. Michigan, September 2014
8. Purdue University astrophysics seminar, November 2014
9. Indiana University Astronomy Colloquium, November 2014
10. Georgia Institute of Technology astrophysics seminar, December 2014

2013:

1. University of Chicago Astrophysics Colloquium, Mar. 2013
2. NCSA Private Sector Partnership meeting, May 2013
3. Aspen Center for Physics workshop on Milky Way formation, July 2013
4. MSU Physics Colloquium, September 2013
5. Lyman Briggs College faculty seminar, November 2013

2012:

1. U. Kentucky astronomy colloquium, Feb. 2012
2. U. Kentucky Center for Computational Sciences Seminar, Feb. 2012
3. Case Western Reserve University, astronomy colloquium, Feb. 2012
4. Ohio State Astronomy Colloquium, Feb. 2012
5. Ohio State physics education seminar, Feb. 2012
6. University of Colorado Astronomy colloquium, March 2012
7. University of Washington Astronomy Colloquium, April 2012

8. Numerical Cosmology 2012, Cambridge, England: **Review talk,** "Comparisons of grid and particle-based methods for cosmological hydrodynamics," July 2012
9. University of Chicago Community Code workshop, "The Enzo community code," September 2012

2011:

1. At "3rd Subaru International Conference," Shuzenji, Japan, Nov. 2011
2. MSU Institute for Cyber-Enabled Research interdisciplinary seminar, Nov. 2011
3. National Institute for Computational Science Director's colloquium, Oak Ridge National Laboratory, October 2011
4. University of Michigan galaxy formation seminar, Sep. 2011
5. MSU ArtScience symposium, June 2011
6. Harvard CfA Institute for Theory and Computation seminar, May 2011
7. Los Alamos National Laboratory astrophysics seminar, May 2011
8. Two invited lectures on N-body simulations in cosmology, TIARA computational astrophysics summer school, Taiwan, Jan. 2011

2010:

1. Michigan State University Galaxy formation seminar, June 2010
2. "The First Stars and Galaxies: Challenges for the Next Decade," University of Texas, Austin, March 2010

2009:

1. "Extreme star formation in dwarf galaxies," University of Michigan, Ann Arbor, July 2009
2. University of Minnesota astronomy colloquium, April 2009
3. University of Minnesota stellar evolution seminar, April 2009

2008:

1. Michigan State University astronomy seminar, Nov. 2008
2. University of Michigan astronomy colloquium, October 2008
3. UC Santa Cruz astronomy colloquium, April 2008
4. Stanford University ACKS seminar, April 2008
5. Michigan State University astronomy seminar, January 2008

2007:

1. University of Chicago astrophysics seminar, Nov. 2007
2. Seminar given "Star formation through cosmic time" workshop, hosted by KITP, UC Santa Barbara, Oct. 2007
3. Fermi National Accelerator Laboratory astrophysics seminar, Sept. 2007
4. University of Notre Dame astrophysics seminar, Sept. 2007
5. Talk given at "Star formation through cosmic time" conference, hosted by KITP, UC Santa Barbara, August 2007
6. Santa Fe Cosmology Workshop, hosted by Los Alamos National Laboratory – **review talk.** July 2007
7. Keele University astrophysics seminar, June 2007
8. University of Central Lancashire astrophysics seminar, June 2007
9. University College London Computational science lecture series, June 2007
10. University College London astrophysics colloquium, June 2007
11. University of New Mexico Institute for Advanced Studies seminar, April 2007

2006 and before:

1. University of Florida astronomy seminar, Dec. 2006
2. University of New Mexico particle physics seminar, Nov. 2006
3. Columbia University astronomy seminar, Oct. 2006
4. American Museum of Natural History astrophysics seminar, Oct. 2006
5. Los Alamos National Laboratory astrophysics seminar, Sept. 2006
6. At "Physics and astrophysics of supermassive black holes," hosted by Los Alamos National

Laboratory, July 2006
7. At "First Stars," a workshop hosted by the Institute for Nuclear Theory, University of Washington, July 2006
8. University of Colorado at Boulder JILA seminar, April 2006
9. UC Berkeley astrophysics lunch seminar, Nov. 2005
10. Stanford astrophysics lunch seminar, Nov. 2005
11. At "SF05 Cosmology Summer Workshop," hosted by Los Alamos National Laboratory, Santa Fe, NM, July 2005
12. At "Chemical Enrichment of the Early Universe," hosted by Los Alamos National Laboratory, Santa FE, NM, August 2004
13. At "A workshop on adaptive mesh refinement methods in cosmology," University of Durhum, England, June 2004

Contributed Conference Talks and Posters

2023:
1. Dense Z-Pinch Meeting, Ann Arbor, MI, July 9-13, 2023
2. Black Holes on Broadway, Center for Computational Astrophysics, New York, NY, Dec. 3-7, 2023

2022:
1. Parthenon user and developer meeting, Los Alamos, NM. Oct. 2022

2016:
1. At the JINA Frontiers Meeting, East Lansing, MI Mar. 2016
2. International Conference on Computational Science, June 2016

2015:
1. At the JINA Frontiers Meeting, East Lansing, MI, Mar. 2015

2012:
1. At the 2012 Joint Space Science Institute workshop on "Nature's particle accelerators," Oct. 22-25, 2012, Annapolis, MD (talk)

2011:
1. At 2011 Enzo Workshop, October 2011 (talk)
2. At "TeraGrid 2011," July 2011 (talk)
3. Kavli Institute for Theoretical Astrophysics galaxy cluster formation conference, March 2011 (poster)

2010:
1. At "Teragrid 2010", Pittsburgh, PA, August 2010 (talk)
2. At "From first stars to galaxies," University of Florida, Gainesville, April 2010 (talk)

2009:
1. At "The Monster's Fiery Breath," University of Wisconsin, Madison, June 2009 (talk)

2008:
1. At "The Warm and Hot Universe," Columbia University, New York, April 2008 (talk)
2. At the American Astronomical Society 211th meeting, Austin, TX, Jan. 2008. (1 talk, 1 poster)

2007:
1. At "Radio surveys: science and techniques," Los Alamos, NM, April 2007 (talk)
2. At "A new zeal for old galaxies," Rotorua, New Zealand, March 2007 (talk)

2006 and before:

1. At the Space Telescope Science Institute May Symposium on "Massive stars, from Pop III and GRBs to the Milky Way," Baltimore, MD, May 2006 (2 posters)
2. At the Space Telescope Science Institute mini-workshop on "The End of the Dark Ages," Baltimore, MD, March 2006 (1 talk, 1 poster)
3. At "Protostars and Planets V," Hawaii, October 2006 (poster)
4. At "International Astronomical Union Symposium 228 – From Lithium to Uranium: Early Tracers of Cosmic Chemical Evolution," Paris, France, May 2005 (poster)
5. At the 205th meeting of the American Astronomical Society, Jan. 2005, San Diego, CA (talk)
6. At the "1st Arizona-Heidelberg Symposium: The High Redshift Frontier," Tucson, AZ, Nov. 2004 (talk)
7. At "A Workshop on Adaptive Mesh Refinement Methods in Cosmology," University of Durham, June 2004 (talk)
8. At the "3rd Annual Theoretical Astrophysics in Southern California (TASC) Meeting," UCLA, October 2003 (talk)
9. At the "Chicago Workshop on Adaptive Refinement Methods," University of Chicago, Sept. 2003 (talk)
10. At the "3rd Annual Theoretical Astrophysics in Southern California (TASC) Meeting," Santa Barbara, CA, October 2002 (talk)

Graduate Student and Postdoctoral Researcher Outcomes

MS and PhD students:

1. Carolyn Peruta (MSU Astrophysics PhD, 2013): Education Support Scientist, Sonoma State University
2. Sam Skillman (CU/Bounder Astrophysics PhD, 2013; co-advised with Jack Burns): Cloud HPC Architect, Google (formerly Chief Architect at Descartes Labs)
3. Greg Meece (MSU Astrophysics PhD, 2016; co-advised with Mark Voit): Business Intelligence Analyst, Sparrow Health System
4. Brian Crosby (MSU Astrophysics PhD, 2016): Data Scientist (energy futures industry), self-employed
5. Jared Carlson (MSU CMSE MS, 2021; co-advised with Sean Couch): Senior AI Engineer, Techcyte
6. Forrest Glines (MSU Astrophysics + CMSE dual PhD, 2022): Metropolis Fellow, Los Alamos National Laboratory
7. Claire Kopenhafer (MSU Astrophysics + CMSE dual PhD, 2022): Research Consultant, Michigan State University Institute for Cyber-Enabled Research

Postdoctoral researchers:

1. Britton Smith (2009-2012), Chancellor's Fellow, University of Edinburgh
2. Facundo Gomez (2011-2014), Professor, Universidad de La Serena Department of Astronomy
3. Devin Silvia (2013-17; NSF AAPF 2014-17), Teaching Specialist, Michigan State University Department of Computational Mathematics, Science, and Engineering
4. Brian Danielak (2015-2017), Keystone Instructor, University of Maryland
5. Benoit Côté (2015-2018), Data Services Software Engineer, Argonne National Laboratory
6. Philipp Grete (2016-2021), Marie Skłodowska-Curie Actions Postdoctoral Fellow at the Hamburg Observatory.
7. Deovrat Prasad (2018-2022), Postdoctoral Research Associate, Cardiff University School of Physics & Astronomy