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Education

Ph.D. Physics, University of Texas at Austin, May 2021 (expected).
Thesis advisor: Prof. Willy Fischler
GPA: 3.60

B.S. Physics and B.S. Mathematics, Oklahoma State University, August 2013.
GPA: 3.69

Honors and Awards

OGS Summer Only Fellowship Summer 2018
Nominated for UT Services for Students with Disabilities Appreciation Award Fall 2016
OSU Department of Physics Outstanding Senior 2012
OSU Department of Physics Outstanding Junior 2011

Publications and Preprints

E. Cáceres, S. Chapman, J. D. Couch, J. P. Hernandez, R. C. Myers and S. M. Ruan, "Complexity of Mixed States in QFT and Holography," JHEP **03**, 012 (2020) doi:10.1007/JHEP03(2020)012 [arXiv:1909.10557 [hep-th]]. 17 citations counted in INSPIRE as of 02 Jul 2020

J. Couch, S. Eccles, P. Nguyen, B. Swingle and S. Xu, "The Speed of Quantum Information Spreading in Chaotic Systems," [arXiv:1908.06993 [cond-mat.stat-mech]]. 6 citations counted in INSPIRE as of 02 Jul 2020

E. Cáceres, J. Couch, S. Eccles and W. Fischler, "Holographic Purification Complexity," Phys. Rev. D **99**, no. 8, 086016 (2019) doi:10.1103/PhysRevD.99.086016 [arXiv:1811.10650 [hep-th]]. 11 citations counted in INSPIRE as of 02 Jul 2020

J. Couch, S. Eccles, T. Jacobson and P. Nguyen, "Holographic Complexity and Volume," JHEP **1811**, 044 (2018) doi:10.1007/JHEP11(2018)044 [arXiv:1807.02186 [hep-th]]. 21 citations counted in INSPIRE as of 02 Jul 2020

J. Couch, S. Eccles, W. Fischler and M. L. Xiao, "Holographic complexity and noncommutative gauge theory," JHEP **1803**, 108 (2018) doi:10.1007/JHEP03(2018)108 [arXiv:1710.07833 [hep-th]]. 46 citations counted in INSPIRE as of 02 Jul 2020

J. Couch, W. Fischler and P. H. Nguyen, "Noether charge, black hole volume, and complexity," JHEP **1703**, 119 (2017) doi:10.1007/JHEP03(2017)119 [arXiv:1610.02038 [hep-th]]. 124 citations counted in INSPIRE as of 02 Jul 2020

Conferences and Workshops

- Mexicuerdas 2019, Instituto de Ciencias Nucleares, UNAM, Mexico City, Mexico - Speaker
- Southwest Strings Meeting 2019, Arizona State University, Tempe, AZ. - Speaker
- Joint meeting of the Texas Section of the APS, Texas Section of the AAPT, and Zone 13 of the SPS 2018, University of Houston, Houston, TX - Speaker
- Prospects in Theoretical Physics 2018, "From Qubits to Spacetime", Institute for Advanced Study, Princeton, NJ - Participant
- Southwest Holography Meeting 2018, University of Texas at Austin, Austin, TX. - Speaker
- Joint meeting of the Texas Section of the APS, Texas Section of the AAPT, and Zone 13 of the SPS 2017, University of Texas at Dallas, Richardson, TX - Speaker
- "Quantum Information in Quantum Gravity III" (2017), University of British Columbia, Vancouver, BC - Participant
- It from Qubit "Complexity and Back Holes" Workshop (2017), Stanford Institute for Theoretical Physics, Stanford University, Stanford, CA - Participant

Talks

- "The Speed of Quantum Information Spreading in Chaotic Systems," Mexicuerdas 2019, Instituto de Ciencias Nucleares, UNAM, Mexico City, Mexico December 2019
- "Holographic Complexity and Volume," Southwest Strings Meeting 2019, Arizona State University, Tempe, AZ February 2019
- "Purification complexity in free scalar field theory," Joint Meeting of the Texas Section of the APS, Texas Section of the AAPT, and Zone 13 of the SPS, Houston, TX October 2018
- "Holographic Complexity," Oklahoma State University, Stillwater, OK April 2018
- "Holographic Complexity and Non-Commutative Gauge Theory," Southwest Holography Meeting 2018, University of Texas at Austin, Austin, TX March 2018
- "Holographic Complexity and Non-Commutative Gauge Theory," Joint Meeting of the Texas Section of the APS, Texas Section of the AAPT, and Zone 13 of the SPS, Richardson, TX October 2017

Teaching Experience

- PHY 373 (Quantum Physics I: Foundations) - Grader and Discussion TA F 2015, F 2018, & S 2020
- PHY 341 (Forensic Science) - Grader Fall 2017 and 2019
- PHY 389K (Graduate Quantum Mechanics I) - Grader Spring 2018
- PHY 362L (Quantum Physics III: Particles and Nuclei) - Grader Spring 2016 & 2018
- PHY 373 (Quantum Physics I: Foundations) - Grader and Discussion TA Fall 2015 & 2018
- PHY 316 (Electricity and Magnetism) - Grader and Discussion TA Spring 2017 & 2018

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| PHY 352K (Classical Electrodynamics I) - Grader and Discussion TA | Fall 2016 |
| PHY 103M (Lab for Engineering Physics II) - Teaching Assistant | S/F 2014 & S/Summer 2015 |
| PHY 103N (Lab for Engineering Physics I) - Teaching Assistant | Fall 2013 |