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|------------------------|--|--|
| CONTACT INFORMATION    | <p>Fermi National Accelerator Laboratory<br/> Theoretical Physics Division, Astrophysics Department<br/> Website: <a href="https://samueldmcdermott.github.io/">https://samueldmcdermott.github.io/</a><br/> Email: <a href="mailto:samueldmcdermott@gmail.com">samueldmcdermott@gmail.com</a></p>   | <p>Citizenship: USA<br/> Phone: (215) 990-7036</p> |
| AREAS OF EXPERTISE     | <p><i>General:</i> High-dimensional Bayesian parameter inference and uncertainty quantification; machine learning (97.25% in Andrew Ng's Coursera class, member of Deep Skies Lab at KICP and FNAL); 1D and 2D signal analysis; wavelet transforms.</p> <p><i>Academic:</i> Identification of particle physics beyond the Standard Model; maximizing utility of astrophysical data sets; new physics in stars, extreme astrophysical environments, and cosmological settings.</p>  |  |
| EMPLOYMENT             | <p><b>Fermi National Accelerator Laboratory</b>      Sept 2017 / Jan 2019 - Sept 2022<br/> Postdoctoral associate / Schramm Fellow</p> <p><b>C. N. Yang Institute for Theoretical Physics</b>      Sept 2014 - Sept 2017<br/> Postdoctoral Associate</p>   |  |
| EDUCATION              | <p><b>Ph.D.</b>, Physics, The University of Michigan, Ann Arbor      Aug 2014<br/> Dissertation Advisor: Dr. Kathryn M. Zurek</p> <p><b>B.A.</b>, Physics and <b>B.A.</b>, Math, The University of Pennsylvania      Dec 2008<br/> Research Advisor: Dr. Marija Drndic</p>   |  |
| AWARDS AND RECOGNITION | <p><b>Fermilab</b></p> <ul style="list-style-type: none"> <li>Schramm Fellowship      2019</li> <li>URA Thesis Award      2015</li> <li>Predoctoral Theory Fellowship      2013-2014</li> </ul> <p><b>The University of Michigan</b></p> <ul style="list-style-type: none"> <li>Rackham Predoctoral Fellowship      2013-2014</li> </ul> <p><b>The University of Pennsylvania</b></p> <ul style="list-style-type: none"> <li><i>Summa cum Laude</i>, with Distinction in Physics; Dean's List, all semesters; Benjamin Franklin Scholar; Phi Beta Kappa scholar</li> </ul> |  |
| PUBLICATION STATISTICS | <p>According to the <b>inSpireHEP</b> database, as of September 1, 2022:</p> <ul style="list-style-type: none"> <li>46 research publications and 1 review article</li> <li>9 <i>Letters</i> published (7 in the Physical Review, 1 in the Astrophysical Journal, 1 in Physics Letters B)</li> <li>one solicited whitepaper for Snowmass 2020; numerous letters of interest for Snowmass 2020 and Astro20 Decadal</li> <li>more than 3,850 total citations</li> <li><i>h</i>-index: 28</li> </ul>   |  |
| PUBLICATIONS           | <p>Prepared while at Fermilab as a postdoctoral associate:</p> <p>48. SDM, Yi-Ming Zhong, and Ilias Cholis. <i>A Phantom Menace: On the Morphology of the Galactic Center Excess</i>. <a href="https://arxiv.org/abs/2209.00006">arXiv:2209.00006</a>. FERMILAB-PUB-22-650-T.</p>  |  |

47. Jeremy Sakstein, Djuna Croon, and SDM. *Axion Instability Supernovae*. Phys. Rev. D **105**, 095038 (2022). [arXiv:2203.06160](#). FERMILAB-PUB-22-118-T.
46. Ilias Cholis, Yi-Ming Zhong, SDM, and Joseph P. Surdutovich. *The Return of the Templates: Revisiting the Galactic Center Excess with Multi-Messenger Observations*. Phys. Rev. D **105**, no.10, 103023 (2022). [arXiv:2112.09706 \[astro-ph\]](#). FERMILAB-PUB-21-709-T.
45. Marcela Carena, Nina M. Coyle, Yingying Li, SDM, and Yuhsin Tsai. *Cosmologically Degenerate Fermions*. [arXiv:2108.02785](#). FERMILAB-PUB-21-325-T.
44. Susan Gardner, SDM, and Brian Yanny. *The Milky Way, Coming into Focus: Precision Astrometry Probes its Evolution, and its Dark Matter*. Prog. Part. Nucl. Phys. **121**, 103904 (2021). [arXiv:2106.13284 \[astro-ph\]](#). FERMILAB-PUB-21-297-T.
43. Pierce Giffin, John Lloyd, SDM, and Stefano Profumo. *Neutron Star Quantum Death by Small Black Holes*. Phys. Rev. D **105**, 123030 (2022). [arXiv:2105.06504](#). FERMILAB-PUB-21-259-T.
42. Eric J. Baxter, Djuna Croon, SDM, and Jeremy Sakstein. *Find the Gap: Black Hole Population Analysis with an Astrophysically Motivated Mass Function*. Astrophys. J. Lett. **916**, no.2, L16 (2021). [arXiv:2104.02685 \[astro-ph\]](#). FERMILAB-PUB-21-148-T.
41. Carlos Blanco, Yonatan Kahn, Benjamin Lillard, and SDM, *Dark Matter Daily Modulation With Anisotropic Organic Crystals*. Phys. Rev. D **104**, 036011 (2021). [arXiv:2103.08601](#). FERMILAB-PUB-21-066-T.
40. James M. Cline, Guillermo Gambini, SDM, and Matteo Puel, *Late-Time Dark Matter Oscillations and the Core-Cusp Problem*. JHEP **04**, 223 (2021). [arXiv:2010.12583](#). FERMILAB-PUB-20-556-T.
39. Jeremy Sakstein, Djuna Croon, SDM, Maria C. Straight and Eric J. Baxter, *Beyond the Standard Model Explanations of GW190521*. Phys. Rev. Lett. **125**, no.26, 261105 (2020). [arXiv:2009.01213 \[gr-qc\]](#). FERMILAB-PUB-20-461-T.
38. Djuna Croon, SDM, and Jeremy Sakstein. *Missing in Action: New Physics and the Black Hole Mass Gap*. Phys. Rev. D **102**, no. 11, 115024; selected as an **Editor's Choice** article. [arXiv:2007.07889 \[gr-qc\]](#). FERMILAB-PUB-20-328-T.
37. Djuna Croon, SDM, and Jeremy Sakstein. *Missing in Axion: where are XENON1T's big black holes?* Phys. Dark Univ. **32**, 100801 (2021). [arXiv:2007.00650](#). FERMILAB-PUB-20-270-T.
36. Djuna Croon, Gilly Elor, Rebecca Leane, and SDM. *Supernova Muons: New Constraints on  $Z'$  Bosons, Axions, and ALPs*. JHEP **01**, 107 (2021). [arXiv:2006.13942](#). FERMILAB-PUB-20-246-A-T.
35. Celeste Keith, Dan Hooper, SDM, and Nikita Blinov. *Constraints on Primordial Black Holes From Big Bang Nucleosynthesis Revisited*. Phys. Rev. D **102**, no.10, 103512 (2020). [arXiv:2006.03608 \[astro-ph\]](#). FERMILAB-PUB-20-224-A.

34. Dan Hooper, Gordan Krnjaic, John March-Russell, SDM, and Rudin Petrossian-Byrne. *Hot Gravitons and Gravitational Waves From Kerr Black Holes in the Early Universe*. [arXiv:2004.00618 \[astro-ph\]](#). FERMILAB-PUB-20-125-A-T.
33. Samuel J. Witte, Salvador Rosauero-Alcaraz, SDM, and Vivian Poulin. *Dark Photon Dark Matter in the Presence of Inhomogeneous Structure*. JHEP **06**, 132 (2020). [arXiv:2003.13698 \[astro-ph\]](#). FERMILAB-PUB-20-121-T.
32. Yi-Ming Zhong, SDM, Ilias Cholis, and Patrick J. Fox. *A New Mask for An Old Suspect: Testing the Sensitivity of the Galactic Center Excess to the Point Source Mask*. Phys. Rev. Lett. **124**, no.23, 231103 (2020). [arXiv:1911.12369 \[astro-ph\]](#). FERMILAB-PUB-19-575-T.
31. SDM and Samuel J. Witte. *The Cosmological Evolution of Light Dark Photon Dark Matter*. Phys. Rev. D **101**, 063030 (2020). [arXiv:1911.05086 \[hep-ph\]](#). FERMILAB-PUB-19-565-T.
30. Gordan Krnjaic and SDM. *Implications of BBN Bounds for Cosmic Ray Upscattered Dark Matter*. Phys. Rev. D **101**, no.12, 123022 (2020). [arXiv:1908.00007 \[hep-ph\]](#). FERMILAB-PUB-19-358-A.
29. Nikita Blinov, Kevin J. Kelly, Gordan Krnjaic, and SDM. *Constraining the Self-Interacting Neutrino Interpretation of the Hubble Tension*. Phys. Rev. Lett. **123**, no. 19, 191102 (2019). [arXiv:1905.02727 \[astro-ph\]](#). FERMILAB-PUB-19-175-A-T.
28. Dan Hooper, Gordan Krnjaic, and SDM. *Dark Radiation and Superheavy Dark Matter from Black Hole Domination*. JHEP **08**, 001 (2019). [arXiv:1905.01301 \[hep-ph\]](#). FERMILAB-PUB-19-186-A.
27. SDM and Michael S. Turner. *Nuclear Kinetic Equilibrium During Big Bang Nucleosynthesis*. [arXiv:1811.04932 \[hep-ph\]](#). FERMILAB-PUB-18-625-A.
26. SDM, Sanjay Reddy, and Srimoyee Sen. *A Deeply Bound Dibaryon is Incompatible with Neutron Stars and Supernovae*. Phys. Rev. D **99**, no. 3, 035013 (2019). [arXiv:1809.06765 \[hep-ph\]](#). FERMILAB-PUB-18-490-A.
25. Rouven Essig, SDM, Hai-Bo Yu, and Yi-Ming Zhong. *Constraining Dissipative Dark Matter Self-Interactions*. Phys. Rev. Lett. **123**, no. 12, 121102 (2019). [arXiv:1809.01144 \[hep-ph\]](#). FERMILAB-PUB-18-437-A.
24. Dan Hooper, Gordan Krnjaic, Andrew J. Long, and SDM. *WIMPflation*. Phys. Rev. Lett. **122**, no. 9, 091802 (2019). [arXiv:1807.03308 \[hep-ph\]](#). FERMILAB-PUB-18-309-A.
23. Asher Berlin, Dan Hooper, Gordan Krnjaic, and SDM. *Severely Constraining Dark Matter Interpretations of the 21-cm Anomaly*. Phys. Rev. Lett. **121**, no. 1, 011102 (2018); selected as an **Editor's Choice** article. [arXiv:1803.02804 \[hep-ph\]](#). FERMILAB-PUB-18-066-A.
22. Bhaskaran Balaji, Ilias Cholis, Patrick J. Fox, and SDM. *Analyzing the Gamma-ray Sky with Wavelets*. [arXiv:1803.01952 \[astro-ph\]](#). Phys. Rev. D **98**, no. 4, 043009 (2018). FERMILAB-PUB-18-057-A-T.

21. Jae Hyeok Chang, Rouven Essig, and SDM. *Supernova 1987A Constraints on Sub-GeV Dark Sectors, Millicharged Particles, the QCD Axion, and an Axion-like Particle*. JHEP **09**, 051 (2018). [arXiv:1803.00993 \[hep-ph\]](#). YITP-SB-18-01, FERMILAB-PUB-17-432-T.
20. Dan Hooper and SDM. *Robust Constraints and Novel Gamma-Ray Signatures of Dark Matter That Interacts Strongly With Nucleons*. Phys. Rev. D **97**, 115006 (2018). [arXiv:1802.03025 \[hep-ph\]](#). FERMILAB-PUB-18-032-A.
19. SDM. *Is Self-Interacting Dark Matter Undergoing Dark Fusion?* Phys. Rev. Lett. **120**, 221806 (2018); selected as an **Editor's Choice** article. [arXiv:1711.00857 \[hep-ph\]](#). FERMILAB-PUB-17-483-A-T.

Prepared while at YITP Stony Brook as a postdoctoral associate:

18. SDM, Hiren H. Patel, and Harikrishnan Ramani. *Dark Photon Decay Beyond The Euler-Heisenberg Limit*. Phys. Rev. D **97**, no. 7, 073005 (2018). [arXiv:1705.00619 \[hep-ph\]](#). YITP-SB-17-14.
17. Samuel Witte, Vera Gluscevic, and SDM. *Prospects for Distinguishing Dark Matter Models Using Annual Modulation*. JCAP **02**, no. 02, 044 (2017). [arXiv:1612.07808 \[hep-ph\]](#). YITP-SB-16-51.
16. Jae Hyeok Chang, Rouven Essig, and SDM. *Revisiting Supernova 1987A Bounds on Dark Photons*. JHEP **01**, 107 (2017). [arXiv:1611.03864 \[hep-ph\]](#). YITP-SB-16-44.
15. SDM, Patrick Meade, and Harikrishnan Ramani. *Singlet Scalar Resonances and the Diphoton Excess*. Phys. Lett. B **755**, 353 (2016). [arXiv:1512.05326 \[hep-ph\]](#). YITP-SB-15-47.
14. SDM, Ilias Cholis, Patrick J. Fox, and Samuel K. Lee. *Wavelet-Based Techniques for the Gamma-Ray Sky*. JCAP **07**, 07, 045, (2016). [arXiv:1512.00012 \[astro-ph\]](#). YITP-SB-15-43.
13. Asher Berlin, Dan Hooper, and SDM. *Dark matter elastic scattering through Higgs loops*. Phys. Rev. D **92**, no. 12, 123531 (2015). [arXiv:1508.05390 \[hep-ph\]](#). YITP-SB-15-29.
12. Hooman Davoudiasl, Dan Hooper, and SDM. *Inflatable Dark Matter*. Phys. Rev. Lett. **116**, 031303 (2016); selected as an **Editor's Choice** article. [arXiv:1507.08660 \[hep-ph\]](#). YITP-SB-15-26.
11. Vera Gluscevic, Moira Gresham, SDM, Annika H. G. Peter, and Kathryn M. Zurek. *Identifying the Theory of Dark Matter with Direct Detection*. JCAP **12**, 12, 057 (2015). [arXiv:1506.04454 \[hep-ph\]](#). YITP-SB-15-16. Associated code publicly available on [github](#) and [ASCL](#).

Prepared while at Fermilab as a Fermilab Fellow:

10. SDM. *Lining up the Galactic Center Gamma-Ray Excess*. Phys. Dark Univ. **7-8**, 12 (2015). [arXiv:1406.6408 \[hep-ph\]](#). FERMILAB-PUB-14-205-A-T.
9. Asher Berlin, Pierre Gratia, Dan Hooper, and SDM. *Hidden Sector Dark Matter Models for the Galactic Center Gamma-Ray Excess*. Phys. Rev. D **90**, 015032 (2014). [arXiv:1405.5204 \[hep-ph\]](#). MCTP-14-12, FERMILAB-PUB-14-134-A.

8. Asher Berlin, Dan Hooper, and SDM. *Simplified Dark Matter Models for the Galactic Center Gamma-Ray Excess*. Phys. Rev. D **89**, 115022 (2014). [arXiv:1404.0022 \[hep-ph\]](#). MCTP-14-07, FERMILAB-PUB-14-060-A.
7. Ilias Cholis, Dan Hooper, and SDM. *Dissecting the Gamma-Ray Background in Search of Dark Matter*. JCAP **02**, 014 (2014). [arXiv:1312.0608 \[astro-ph\]](#). MCTP-13-40, FERMILAB-PUB-13-546-A.
6. Rouven Essig, Eric Kuflik, SDM, Tomer Volansky, and Kathryn M. Zurek. *Constraining Light Dark Matter with Diffuse X-Ray and Gamma-Ray Observations*. JHEP **11**, 193 (2013). [arXiv:1309.4091 \[hep-ph\]](#). MCTP-13-27, FERMILAB-PUB-13-377-A-T.

Prepared while a graduate student at the [University of Michigan](#) and a member of the Michigan Center for Theoretical Physics ([MCTP](#)):

5. Clifford Cheung, SDM, and Kathryn M. Zurek. *Inspecting the Higgs for New Weakly Interacting Particles*. JHEP **04**, 074 (2013). [arXiv:1302.0314 \[hep-ph\]](#). MCTP-13-01.
4. Eric Kuflik, SDM, and Kathryn M. Zurek. *Neutrino Phenomenology in a 3+1+1 Framework*. Phys. Rev. D **86**, 033015 (2012). [arXiv:1205.1791 \[hep-ph\]](#). MCTP-12-11.
3. SDM, Hai-Bo Yu, and Kathryn M. Zurek. *The Dark Matter Inverse Problem: Extracting Particle Physics from Scattering Events*. Phys. Rev. D **85**, 123507 (2012). [arXiv:1110.4281 \[hep-ph\]](#). MCTP-11-34.
2. SDM, Hai-Bo Yu, and Kathryn M. Zurek. *Constraints on Scalar Asymmetric Dark Matter from Black Hole Formation in Neutron Stars*. Phys. Rev. D **85**, 023519 (2012). [arXiv:1103.5472 \[hep-ph\]](#). MCTP-11-16.
1. SDM, Hai-Bo Yu, and Kathryn M. Zurek. *Turning off the Lights: How Dark is Dark Matter?* Phys. Rev. D **83**, 063509 (2011). [arXiv:1011.2907 \[hep-ph\]](#). MCTP-10-52.

## CODE

I have the following programming language skills

- **Proficiency:** Python (numpy, scipy, keras, jax, numpyro, ...), Mathematica, HTML
- **Familiarity:** Cython, CSS, bash, slurm

In addition, I wrote the following code packages

- [gcepy](#), is a code for sampling for testing models of the Galactic center excess (GCE). This code relies on jax for all basic definitions, building up to a log-likelihood for the model given the data. The repository provides an ipynb demonstrating how to use two high-dimensional samplers, dynesty and numpyro, to derive constraints on the parameters.
- [dmdd](#), ascl:1506.002, is a python package that enables simple simulation and Bayesian posterior analysis of nuclear-recoil data from dark matter direct detection experiments for a wide variety of theories of dark matter-nucleon interactions. [dmdd](#) was developed in collaboration with Vera Gluscevic for use in [arXiv:1506.04454](#), additionally with Moira Gresham, Annika H. G. Peter, and Kathryn M. Zurek. [dmdd](#) was used by the PICO collaboration to set official limits in [arXiv:1510.07754 \[hep-ex\]](#)

COLLOQUIA AND *New Physics at the Stellar Frontier*

|               |   |              |
|---------------|---|--------------|
| SUMMARY TALKS | • Argonne National Laboratory Physics Division                          | Jan 27, 2022 |
|               | • University of Utah Department of Physics & Astronomy                  | Jan 25, 2022 |
|               | • King's College London Theoretical Particle Physics & Cosmology        | Oct 25, 2021 |
|               | <i>Stellar Probes of New Physics</i> Topical Review                     |              |
|               | • Brookhaven Forum 2021   | Nov 3, 2021  |
|               | <i>Hunting for Dark Matter in the Lab, the Galaxy, and the Universe</i> |              |
|               | • University of Victoria Department of Physics & Astronomy              | Mar 9, 2020  |

## INVITED TALKS Assorted topics:

|           |  |                            |
|-----------|--|----------------------------|
| (*REMOTE) | • Carnegie Mellon University Stellar Tests of Gravity Workshop | Mar 18 2022                |
|           | • 4D Seminar, University of California Berkeley                | Feb 14, 2022               |
|           | • *Carleton HEP Seminar  | Nov 8, 2021                |
|           | • *INT Workshop  | Sept 21, 2021              |
|           | • *BSM PANDEMIC Series   | Sept 14, 2021              |
|           | • *Particles and Nuclei International Conference               | Sept 8, 2021               |
|           | • *Cambridge (Mass.) High Energy Workshop 2021 - Axion Physics | July 28, 2021              |
|           | • *APS DPF 2021  | July 13, 2021              |
|           | • *The 16th Marcel Grossman Meeting                            | July 8, 2021               |
|           | • *Cosmology from Home   | July 7, 2021               |
|           | • *A Rainbow of Dark Sectors, Aspen Center for Physics         | Apr 1, 2021                |
|           | • *HEP Seminar, UC Santa Barbara                               | Nov 16, 2020               |
|           | • *APEC Seminar, Kavli IPMU                                    | Oct 21, 2020               |
|           | • *SITP Seminar, Stanford University                           | Oct 15, 2020               |
|           | • *High Energy Theory Seminar, Brown University                | Oct 14, 2020               |
|           | • *High Energy Physics Seminar, Caltech                        | Oct 12, 2020               |
|           | • *Perimeter Institute Seminar                                 | Apr 28, 2020               |
|           | • *MCFP Seminar, University of Maryland                        | Mar 26, 2020               |
|           | • *Theory Seminar, Notre Dame                                  | Feb 23, 2020               |
|           | • *N3AS Seminar  | Feb 2, 2020                |
|           | • *Israeli Joint Particle Physics Seminar, Hebrew University   | Jun 24, 2020               |
|           | • *Thursday Seminar, CERN Th                                   | Mar 19, 2020               |
|           | • New Techniques for Dark Matter Discovery, TRIUMF             | Mar 12, 2020               |
|           | • CCPP Seminar, New York University                            | Jan 31, 2020               |
|           | • YITP-Brookhaven Joint Seminar, Stony Brook University        | Jan 29, 2020               |
|           | • Informal Seminar, Harvard University                         | Jan 24, 2020               |
|           | • Nuclear Theory Seminar, University of Kentucky               | Dec 19, 2019               |
|           | • Nuclear and Particle Theory Seminar, MIT                     | Oct 28, 2019               |
|           | • Exceptional Seminar, CERN Th                                 | Sept 30, 2019              |
|           | • CCPP Seminar, New York University                            | Feb 9, 2019                |
|           | • Brown Bag Seminar, University of Michigan                    | Oct 31, 2018               |
|           | • Cosmic Controversies, KICP                                   | Oct 7, 2019                |
|           | • No Stone Unturned Workshop, Utah                             | Aug 7, 2019                |
|           | • Current Trends in Particle Theory, UIC                       | June 16, 2019              |
|           | • AAS Dark Matter "Meeting within a Meeting"                   | June 11, 2019              |
|           | • LSST Dark Matter Workshop, KICP                              | Aug 5, 2019                |
|           | • multiple, Aspen Center for Physics                           | 2015, 2016, 2017, and 2019 |
|           | • Seventh PIMKIO meeting, University of Michigan               | March 29, 2019             |



- Theory Seminar, Argonne National Lab April 9, 2019
- Twelfth Conference on the Identification of Dark Matter July 23, 2018
- CIPANP XIII May 30 and 31, 2018
- Theoretical Astrophysics Seminar, Fermilab May 21, 2018
- Kavli Institute for Theoretical Physics Apr 10, 2018
- Theoretical Physics Seminar, Brandeis University Feb 15, 2018
- Theoretical Astrophysics Seminar, Fermilab Feb 5, 2018
- Particle Theory Seminar, Perimeter Institute Dec 1, 2017
- HPS Collaboration Telecon Nov 15, 2017
- Particle Physics Seminar, University of Washington Oct 24, 2017
- ITS Seminar, University of Oregon Oct 23, 2017
- Theory Seminar, SLAC Oct 20, 2017
- 4D Seminar, Berkeley Oct 18, 2017
- Particle Theory Seminar, Boston University Oct 11, 2017
- CFP Seminar, University of Maryland Apr 10, 2017
- Nuclear Theory Seminar, University of Kentucky Apr 6, 2017
- High Energy Theory Seminar, University of Minnesota Mar 10, 2017
- HEP Seminar, Johns Hopkins University Oct 25, 2016
- Dark Interactions Workshop, Brookhaven Sep 7, 2016
- Joint Particle Seminar, UC Irvine Apr 27, 2016
- High Energy Physics Seminar, Caltech Apr 25, 2016
- Astro Coffee, IAS Feb 3, 2016
- Pheno & Vino, Princeton Feb 2, 2016
- Galileo Galilei Institute workshop Sep 30, 2015
- APS DPF meeting, Ann Arbor Aug 5, 2015
- URA Thesis Award Presentation, Fermilab Users Meeting June 10, 2015
- Cornell Particle Theory Seminar Apr 10, 2015
- Maryland CFP Mar 9, 2015
- Brookhaven National Lab Mar 4, 2015
- UT Austin Theory Group Seminar Nov 4, 2014
- IAS Astro Coffee Oct 8, 2014
- MIT CTP Oct 1, 2014
- Université de Montréal and McGill dark matter workshop July 24, 2014
- University of Chicago Dark Matter Hub meeting Apr 15, 2014
- Los Alamos T2 Seminar Dec 5, 2013
- Wisconsin Theory Seminar Nov 8, 2013
- SLAC Theoretical Physics Seminar Oct 30, 2013
- Fermilab Theory Seminar Oct 17, 2013

In addition, I have given parallel and other talks at the Midwest Relativity Meeting, FNAL, Brookhaven Forum, YITP, COSMO2014, TeVPA/IDM 2014, the Pitt Phenomenology meetings, and the 19th SUSY meeting

#### PROFESSIONAL SERVICE

Referee: **Phys. Rev. Letters**, the **Astrophysical Journal**, **MNRAS Letters**, **JHEP**, **Phys. Rev. D**, and **Phys. Letters B**.

Organizer of the following conferences, workshops, and meetings:

- [Dark Matter in Compact Objects, Stars, and in Low Energy Experiments \(22-2b\)](#) (Aug 1- Sep 2, 2022) at the University of Washington's Institute for Nuclear Theory;

inclusive of a \$106,400 grant from the Institute for Nuclear Theory

- [Next Frontiers in the Search for Dark Matter](#) (Aug 26 - Oct 11, 2019) at Galileo Galilei Institute in Arcetri, Italy; inclusive of a five-day conference
- [New Directions in the Search for Light Dark Matter Particles](#) (June 4-7, 2019) at Fermilab and KICP; awarded \$24,525 grant from the Gordon and Betty Moore Foundation
- [Beyond WIMPs: from Theory to Detection](#) (March 27-29, 2017) at the Simons Center for Geometry and Physics
- [Light Dark Matter: Asymmetric, thermal and non-thermal dark matter and its detection](#) (April, 2013) at the Michigan Center for Theoretical Physics

## PRESS

Hershberger, Scott. “Physics at Tiniest Scale Could Explain ‘Impossible’ Black Holes” *Symmetry Magazine*, 16 December 2020.

Hershberger, Scott. “If Betelgeuse goes boom: How DUNE would respond to a nearby supernova.” *Fermilab News*, 5 October 2020.

Sakstein, Jeremy and Croon, Djuna, and SDM. “Beyond the Standard Model Explanations of GW190521.” *Newsletter of the CERN Experimental Physics Department*, 29 September 2020.

Hekkenberg, Ans. “Overschot straling centrum Melkweg niet te verklaren met donkere materie” (Dutch) *newscientist.nl*, 8 September 2020.

Fadelli, Ingrid. “Could recently spotted dim point sources explain the galactic center excess (GCE)?” *Phys.org*, 14 July 2020.

Muñoz, Julian and Loeb, Abraham. “The First Stars May Shed Light on Dark Matter.” *APS Physics*, 2 July 2018.

Conover, Emily. “If real, dark fusion could help demystify this physics puzzle.” *Science News*, 6 June 2018.

Inglis-Arkeel, Esther. “‘Inflatable Dark Matter’ Could Explain Why We See Less Than Many Theories Predict.” *Gizmodo*, 18 January 2016.