

CONTACT INFORMATION	<p>Fermi National Accelerator Laboratory  Particle Physics Division, Astrophysics Theory  Website: <a href="https://samuelmcdermott.github.io/">https://samuelmcdermott.github.io/</a>  Email: <a href="mailto:sammcd00@fnal.gov">sammcd00@fnal.gov</a></p>	<p>Citizenship: USA  Phone: (215) 990-7036</p>
RESEARCH INTERESTS	<p>Dark matter: direct detection, indirect detection, model building, cosmological and astrophysical constraints, Asymmetric Dark Matter, Galactic center GeV excess, Supernova 1987A, Big Bang Nucleosynthesis.  Black Holes: intermediate mass black holes, LIGO observations, observable ramifications of the pulsational pair instability  Field theory: finite temperature effects, effective theory, renormalization.  Neutrinos: sterile neutrinos, low-energy nonunitarity, appearance anomalies.</p>	
EMPLOYMENT	<p><b>Fermi National Accelerator Laboratory</b></p> <ul style="list-style-type: none"> <li>Postdoctoral Associate (6<sup>th</sup> floor) and KICP (associate fellow)  September 2017-present</li> <li>Schramm Fellow  January 2019-present</li> </ul> <p><b>C. N. Yang Institute for Theoretical Physics</b>  Postdoctoral Associate  September 2014-September 2017</p>	
EDUCATION	<p><b>Ph.D.</b>, Physics. <i>Ratcheting up the Search for Dark Matter</i>  The University of Michigan, Ann Arbor. Advisor: Dr. Kathryn M. Zurek  and  Fermi National Accelerator Laboratory. Predoctoral Theory Fellowship, 2013-2014.  Supervisor: Dr. <a href="#">Dan Hooper</a>  August 2014</p> <p><b>B.A.</b>, Physics and <b>B.A.</b>, Math. Honors Thesis: <i>Effect of Electric Field on Fluorescence Intermittency Statistics of CdSe Nanocrystals</i>  The University of Pennsylvania. Advisor: Dr. Marija Drndic  December 2008</p>	
AWARDS AND RECOGNITION	<p><b>Fermilab</b></p> <ul style="list-style-type: none"> <li>Schramm Fellowship</li> <li>Predoctoral Theory Fellowship, 2013-2014, and URA Thesis Award, 2015</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 August 16, 2021:</p> <ul style="list-style-type: none"> <li>44 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>many letters of intent for Snowmass 2020 and Astro20</li> <li>2,964 total citations</li> <li><i>h</i>-index: 25</li> </ul>	

PUBLICATIONS      Prepared while at Fermilab as a postdoctoral associate:

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*. [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*. [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*. [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 **1908**, 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 **1809**, 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 **1702**, 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 **1701**, 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 **1607**, 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 **1512**, 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 **1402**, 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 **1311**, 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 **1304**, 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

[dmdd](#), [ascl:1506.002](#)

- [dmdd](#) 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  
PLENARY TALKS

*Hunting for Dark Matter in the Lab, the Galaxy, and the Universe*

- University of Victoria Dept of Physics and Astronomy

**Mar 9, 2020**

*Indirect Detection*

- 22nd PANIC (Particles and Nuclei International Conference)

**September 2021**

*Stellar Probes of New Physics*

- Brookhaven Forum 2021

**November 2021**

INVITED TALKS  
(\*REMOTE)

*New Physics and the Black Hole Mass Gap*

- \*High Energy Physics Seminar, Caltech
- \*High Energy Theory Seminar, Brown University
- \*SITP Seminar, Stanford University
- \*APEC Seminar, Kavli IPMU
- \*HEP Seminar, UC Santa Barbara

**Oct 12, 2020**

**Oct 14, 2020**

**Oct 15, 2020**

**Oct 21, 2020**

**Nov 16, 2020**

- \*N3AS Seminar Feb 2, 2020
- \*Theory Seminar, Notre Dame Feb 23, 2020
- \*MCFP Seminar, University of Maryland Mar 26, 2020
- \*A Rainbow of Dark Sectors, Aspen Center for Physics March, 2021
- \*Cosmology from Home July, 2021
- \*The 16th Marcel Grossman Meeting July 8, 2021
- \*APS DPF 2021 July 2021
- \*Cambridge (Mass.) High Energy Workshop 2021 - Axion Physics July 2021

*Dark Photons, Cosmologically*

- \*Perimeter Institute Seminar Apr 28, 2020

*A New Mask for An Old Suspect: Testing the Sensitivity of the Galactic Center Excess to the Point Source Mask*

- Nuclear Theory Seminar, University of Kentucky Dec 19, 2019
- Informal Seminar, Harvard University Jan 24, 2020
- YITP-Brookhaven Joint Seminar, Stony Brook University Jan 29, 2020
- CCPP Seminar, New York University Jan 31, 2020
- New Techniques for Dark Matter Discovery, TRIUMF Mar 12, 2020
- \*Thursday Seminar, CERN Th Mar 19, 2020
- \*Israeli Joint Particle Physics Seminar, Hebrew University Jun 24, 2020

*Dark Matter and Fusion: Signals and Constraints from the Dark and the Light*

- Brown Bag Seminar, University of Michigan Oct 31, 2018
- CCPP Seminar, New York University Feb 9, 2019
- Exceptional Seminar, CERN Th Sept 30, 2019
- Nuclear and Particle Theory Seminar, MIT Oct 28, 2019

*Dark Radiation and Superheavy Dark Matter from Black Hole Domination*

- AAS Dark Matter “Meeting within a Meeting” June 11, 2019
- Current Trends in Particle Theory, UIC June 16, 2019
- No Stone Unturned Workshop, Utah Aug 7, 2019
- Cosmic Controversies, KICP Oct 7, 2019

*Stellar Constraints on Dark Matter and Dark Sectors*

- LSST Dark Matter Workshop, KICP Aug 5, 2019

*The Dark Matter Mass and The Dark Matter Cross Section*

- “String Theory and the Hidden Universe” and “Progress After Impasse”, Aspen Center for Physics May 27 & 28, 2019

*Core Collapse Supernovae and Hidden Sectors*

- Theory Seminar, Argonne National Lab April 9, 2019

*A Particle Physicist’s Perspective on EDGES*

- Theoretical Astrophysics Seminar, Fermilab May 21, 2018
- CIPANP XIII May 30, 2018
- Twelfth Conference on the Identification of Dark Matter July 23, 2018
- Seventh PIMKIO meeting, University of Michigan March 29, 2019



*Dark Matter and Fusion*

- Particle Theory Seminar, Perimeter Institute **Dec 1, 2017**
- Theoretical Physics Seminar, Brandeis University **Feb 15, 2018**

*Supernova 1987A Bounds on Hidden Sectors*

- Dark Interactions Workshop, Brookhaven **Sep 7, 2016**
- HEP Seminar, Johns Hopkins University **Oct 25, 2016**
- High Energy Theory Seminar, University of Minnesota **Mar 10, 2017**
- Nuclear Theory Seminar, University of Kentucky **Apr 6, 2017**
- CFP Seminar, University of Maryland **Apr 10, 2017**
- Particle Theory Seminar, Boston University **Oct 11, 2017**
- 4D Seminar, Berkeley **Oct 18, 2017**
- Theory Seminar, SLAC **Oct 20, 2017**
- ITS Seminar, University of Oregon **Oct 23, 2017**
- Particle Physics Seminar, University of Washington **Oct 24, 2017**
- HPS Collaboration Telecon **Nov 15, 2017**
- Theoretical Astrophysics Seminar, Fermilab **Feb 5, 2018**
- *New Probes for Physics Beyond the Standard Model* Conference, KITP **Apr 10, 2018**
- CIPANP XIII **May 31, 2018**

*Inflatable Dark Matter and the 750 GeV Resonance*

- Pheno & Vino, Princeton **Feb 2, 2016**
- Astro Coffee, IAS **Feb 3, 2016**
- High Energy Physics Seminar, Caltech **Ap 25, 2016**
- Joint Particle Seminar, UC Irvine **Apr 27, 2016**

*Probing Theories of Dark Matter with Direct Detection*

- APS DPF meeting, Ann Arbor **Aug 5, 2015**

*Ratcheting up the Search for Dark Matter*

- URA Thesis Award Presentation, Fermilab Users Meeting **June 10, 2015**

*Beyond Templates for the Galactic Center GeV Gamma-ray Excess*

- MIT CTP **Oct 1, 2014**
- IAS Astro Coffee **Oct 8, 2014**
- UT Austin Theory Group Seminar **Nov 4, 2014**
- Brookhaven National Lab **Mar 4, 2015**
- Maryland CFP **Mar 9, 2015**
- Cornell Particle Theory Seminar **Apr 10, 2015**

*The Galactic Center GeV Gamma-ray Excess: Have We Started to See Dark Matter?*

- Université de Montréal and McGill dark matter workshop **July 24, 2014**
- Galileo Galilei Institute workshop **Sep 30, 2015**

*Thoughts on the keV Line*

- University of Chicago Dark Matter Hub meeting **Apr 15, 2014**

*Constraining Dark Matter with Background Light*

- 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

PARALLEL AND OTHER TALKS	<b>Midwest Relativity Meeting</b> New Physics and the Black Hole Mass Gap	Oct 2020
	<b>FNAL</b> New Directions in the Search for Light Dark Matter	June 2019
	<b>Aspen Center for Physics</b>	2015, 2016, 2017, 2019
	<b>Brookhaven Forum</b>	Oct 2015
	<b>YITP</b> Wine and Cheese	Sep 2014
	<b>COSMO2014</b> Parallel Session	Aug 2014
	<b>TeVPA/IDM 2014</b> Parallel Session	June 2014
	<b>Phenomenology</b> Parallel Session	2012, 2013
	<b>University of Michigan</b> Undergraduate Poster Session	Mar 2012
	<b>19th SUSY (2011)</b>	Sep 2011
	<b>University of Michigan</b> Graduate Student Symposium	June 2011
	<b>MCTP Student Journal Club</b>	2009 - 2013

PROGRAMMING LANGUAGES	<b>Proficient:</b> Mathematica, Python, HTML
	<b>Familiar:</b> Cython, CSS

PROFESSIONAL SERVICE	Referee: <b>Phys. Rev. Letters</b> , the <b>Astrophysical Journal</b> , <b>MNRAS Letters</b> , <b>JHEP</b> , <b>Phys. Rev. D</b> , and <b>Phys. Letters B</b> .
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**Next Frontiers in the Search for Dark Matter** Aug 26, 2019 - Oct 11, 2019

- Workshop at Galileo Galilei Institute in Arcetri, Italy
- inclusive of a five-day conference
- Co-organized with Marco Battaglieri, Laura Baudis, Francesco D'Eramo, Claudia Frugieuele, Eric Kuflik, Tongyan Lin, Hitoshi Murayama, and Stefano Profumo

**New Directions in the Search for Light Dark Matter Particles**

June 4-7, 2019

- Workshop at Fermilab and KICP
- Co-organized with Dan Bauer, Dan Baxter, Yoni Kahn, Gordan Krnjaic, and Noah Kurinsky
- awarded \$24,525 grant from the Gordon and Betty Moore Foundation

**Beyond WIMPs: from Theory to Detection**

March 27-29, 2017

- Workshop at Simons Center for Geometry and Physics
- Co-organized with Rouven Essig, Peter Sorensen, Tomer Volansky, and Tien-Tien Yu

**MCTP** Light Dark Matter: Asymmetric, thermal and non-thermal dark matter and its detection  
April, 2013

PRESS	Hershberger, Scott. "Physics at Tiniest Scale Could Explain 'Impossible' Black Holes"
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*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.