WORKSHOP PROGRAM
The Kavli Institute of Cosmological Physics (KICP) at the University of Chicago is hosting the "Towards Dark Matter Discovery" workshop, which will be held from 11th to 13th April 2018 in the Eckhardt Research Center (ERC) on the University of Chicago campus.

The workshop will explore new directions on the path toward discovering the nature of dark matter. The invited speakers are encouraged to share their expertise in the fields of primordial black holes, thermal relic dark matter, nonthermal relic dark matter, ultralight dark matter, superheavy dark matter, kinda-chubby dark matter, new strategies for direct detection, newer strategies for direct detection, avant-garde strategies for direct detection, and axions. During the three day workshop, we will host approximately 20 talks of 30 minutes each with generous time remaining for discussion.

Visitors to the University of Chicago are invited to spend the entire week at the university.

### Organizing Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Daniel Hooper</td>
<td>Kavli Institute for Cosmological Physics</td>
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<td>Andrew Long</td>
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<td>Carlos Wagner</td>
<td>Kavli Institute for Cosmological Physics</td>
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### Invited Speakers

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<tr>
<th>Name</th>
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<tr>
<td>Prateek Agrawal</td>
<td>Harvard University</td>
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<tr>
<td>Ilias Cholis</td>
<td>Johns Hopkins University</td>
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<tr>
<td>Adrienne Erickcek</td>
<td>University of North Carolina, Chapel Hill</td>
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<tr>
<td>Yonatan Kahn</td>
<td>Princeton University</td>
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<tr>
<td>Andrew Long</td>
<td>Kavli Institute for Cosmological Physics</td>
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<tr>
<td>Sean Tulin</td>
<td>York University</td>
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<tr>
<td>Yue Zhang</td>
<td>Northwestern University &amp; Fermilab</td>
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<td>Yacine Ali-Haimoud</td>
<td>New York University</td>
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<tr>
<td>Yanou Cui</td>
<td>University of California, Riverside</td>
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<tr>
<td>Jiji Fan</td>
<td>Brown University</td>
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<tr>
<td>Martin Schmaltz</td>
<td>Boston University</td>
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<tr>
<td>James Unwin</td>
<td>University of Illinois, Chicago</td>
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<td>Antonio Delgado</td>
<td>University of Notre Dame</td>
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<tr>
<td>Roni Harnik</td>
<td>Fermilab</td>
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<tr>
<td>Tim Linden</td>
<td>Ohio State University</td>
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<tr>
<td>Nausheen Shah</td>
<td>Wayne State University</td>
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<tr>
<td>Xiaoping Wang</td>
<td>Argonne National Laboratory</td>
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Wednesday - April 11, 2018

8:30 AM - 8:55 AM  Coffee / Registration

8:55 AM - 9:00 AM  Andrew J. Long, Kavli Institute for Cosmological Physics
                   Welcome!

MORNING SESSION
Chair: Andrew Long

9:00 AM - 9:40 AM  Xiaoping Wang, Argonne National Laboratory
                   Fuzzy Dark Matter and Non-Standard Neutrino Interactions

9:40 AM - 10:20 AM Prateek Agrawal, Harvard University
                   Extending the QCD axion

10:20 AM - 11:00 AM Coffee Break

11:00 AM - 11:40 AM Jiji Fan, Brown University
                   Ultralight scalar dark matter with repulsive self-interaction

11:40 AM - 12:20 PM Yonatan Kahn, Princeton University
                   Searching for keV freeze-in dark matter with Dirac materials

12:20 PM - 2:00 PM  Lunch

AFTERNOON SESSION
Chair: Dan Hooper

2:00 PM - 2:40 PM  Ilias Cholis, John Hopkins University
                   Dark Matter Searches in Gravitational Waves

2:40 PM - 3:20 PM  Tim Linden, Ohio State University
                   Astrophysical Signatures of Dark Matter Accumulation in Neutron Stars

3:20 PM - 4:00 PM  Coffee Break

4:00 PM - 6:00 PM  Free Time / Chalk Talks (Nirmal Raj -- Sebastian Baum)

6:00 PM - 8:00 PM  Reception @ Seven Ten Lanes
                   1055 E 55th St, Chicago, IL 60637
Thursday - April 12, 2018

MORNING SESSION
Chair: Carlos Wagner

9:00 AM - 9:40 AM  
Antonio Delgado, University of Notre Dame  
*Using dileptons events to characterize DM*

9:40 AM - 10:20 AM  
Yanou Cui, University of California, Riverside  
*New Observational Windows for Probing Hidden Dark Sectors*

10:20 AM - 11:00 AM  
Coffee Break

11:00 AM - 11:40 AM  
Gordon Krnjaic, Fermilab  
*Gauged L_\(\mu\) - L_\(\tau\), then and now*

11:40 AM - 12:20 PM  
Yue Zhang, Northwestern University & Fermilab  
*Self-Destructing Dark Matter*

12:20 PM - 2:00 PM  
Lunch

AFTERNOON SESSION
Chair: Carlos Wagner

2:00 PM - 2:40 PM  
Martin Schmaltz, Boston University  
*Large scale structure and cannibal dark matter*

2:40 PM - 3:20 PM  
Sean Tulin, York University  
*Self-Interacting Dark Matter at Intermediate Scales*

3:20 PM - 4:00 PM  
Coffee Break

4:00 PM - 6:00 PM  
Free Time / Chalk Talks (Tongyan Lin -- Bibhushan Shakya -- Alex Drlica-Wagner -- Malte Buschmann)
Friday - April 13, 2018

MORNING SESSION  
Chair: Daniel Hooper

9:00 AM - 9:40 AM  James Unwin, University of Illinois, Chicago  
Superheavy thermal dark matter

9:40 AM - 10:20 AM  Nausheen Shah, Wayne State University  
Higgs Portals for Thermal Dark Matter: EFT Perspectives and the NMSSM

10:20 AM - 11:00 AM  Coffee Break

11:00 AM - 11:40 AM  Adrienne L. Erickcek, University of North Carolina, Chapel Hill  
The Early Universe’s Imprint on Dark Matter

12:00 PM - 1:00 PM  Yacine Ali-Haimoud, New York University  
KICP Friday Seminar: Primordial Black Holes in the era of Planck and LIGO

1:00 PM - 2:00 PM  Lunch

AFTERNOON SESSION  
Chair: Andrew Long

2:00 PM - 2:40 PM  Roni Harnik, Fermilab  
Searching for the Luminous Higgsino at Borexino

2:40 PM - 3:20 PM  Yang Bai, University of Wisconsin, Madison  
Six Flavor Quark Matter

3:20 PM - 4:00 PM  Coffee Break

4:00 PM - 6:00 PM  Free Time / Chalk Talks