

Curriculum Vitae
ALEX DRLICA-WAGNER
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EDUCATION

2013 Stanford University: *Ph.D., Physics*
2008 Washington University in St. Louis: *B.A., Physics (summa cum laude)*

APPOINTMENTS

2018–present Wilson Fellow (Associate Scientist), Fermi National Accelerator Laboratory
2018–present Assistant Professor (part-time), Astronomy & Astrophysics, University of Chicago
2013–2018 Schramm Fellow (Postdoctoral Researcher), Fermi National Accelerator Laboratory
2008–2013 Graduate Research Associate, Stanford University & SLAC National Accelerator Laboratory

HONORS AND AWARDS

2018 *Wilson Fellow*, Fermi National Accelerator Laboratory
2018 *Evans Visiting Scholar in Astrophysics*, University of California, Irvine
2016 *Alvin Tollestrup Award*, Fermi National Accelerator Laboratory
2014 *KICP Associate Fellow*, University of Chicago
2013 *Schramm Fellow*, Fermi National Accelerator Laboratory
2012 *Paul Giddings Graduate Fellow*, Department of Physics, Stanford University
2012 *Joachim Herz Stiftung Fellow*, 62nd Lindau Meeting of Noble Laureates
2010 *Office of Science Graduate Fellow*, United States Department of Energy
2008 *Senior Physics Prize*, Department of Physics, Washington University in St. Louis
2007 *Greg Delos Fellow*, Department of Physics, Washington University in St. Louis

SCIENTIFIC COLLABORATIONS

2018–present DECam Local Volume Exploration (DELVE) Survey
PI: DELVE is a 3-year, 126-night DECam community survey to establish complete coverage of the southern extragalactic sky. The goals of DELVE are 1) to search for ultra-faint satellite galaxies in the halo of the Milky Way, 2) studying the star formation history, outer halo structure, and satellite populations of the Magellanic clouds, 3) searching for faint satellites of isolated low-mass dwarfs in the Local Volume. DELVE has processed >100,000 public DECam exposures using the DES data processing pipeline. I lead survey operations, image reduction, object catalog creation, and dwarf galaxy searches. As PI, I am responsible for collaboration management, project funding, and proposal organization. DELVE has ~ 70 members spread across ~ 30 institutions.

2017–present LSST Stars, Milky Way, and Local Volume Collaboration

- 2015–present *Magellanic Satellites Survey (MagLiteS)*
Deputy PI: MagLiteS is a DECam community survey that seeks to perform a complete, unbiased search for ultra-faint galaxies around the Magellanic Clouds. I lead survey operations, image reduction, object catalog creation, and dwarf galaxy searches. As Deputy PI, I am responsible for writing observing proposals, seeking funding to support operations, and establishing collaboration policies. MagLiteS has ~60 members.
- 2014–present *LSST Dark Energy Science Collaboration (DESC)*
Convener, Dark Matter Working Group: The dark matter working group investigates techniques for probing the fundamental nature of dark matter with LSST. It interfaces with the other DESC working groups (e.g., theory and joint probes, clusters, and strong lensing) and other LSST science collaborations. The dark matter working group has ~40 active members.
Convener, Survey Simulations Working Group: The survey simulations working group is a technical working group focused on improving and validating simulations for the LSST DESC data challenges. The survey simulations working group has ~25 active members.
- 2012–present *Dark Energy Survey (DES) Collaboration*
Co-Coordinator, Milky Way Science Working Group: This is one of the twelve DES science working groups. Science topics include near-field cosmology, Local Group studies, Galactic archaeology, and stellar astrophysics. As co-coordinator, I help guide the scientific direction of the group, organize scientific analyses, and coordinate the resulting publications. The Milky Way working group has ~50 members.
Coordinator, Science Release Working Group: This is one of the twelve DES science working groups. It is responsible for providing, validating, and documenting the data products used for DES cosmology. As founding coordinator, I set the scope and mission of the group and coordinated the production of the data set used for DES Year-1 cosmology. The Science Release working group has ~70 members.
- 2009–present *Fermi Large Area Telescope (LAT) Collaboration*
Affiliated Member: I lead a program to search for signatures of dark matter annihilation in combined observations of Milky Way satellite galaxies. This program has established the strongest and most robust constraints on dark matter annihilation. This work has excluded the natural thermal relic cross section for dark matter particles with mass < 100 GeV.

RESEARCH GRANTS AND OBSERVING PROPOSALS

Total funding through grants, awards, and scholarships: **\$1.1M**

Below are reasearch grants and successful observing proposals that I have led via writing and/or analysis. In addition, I have served as Co-I on successful observing proposals using HST, VLT, Gemini, Magellan, and SOAR.

- 2019 *LSST Data Science Internships for Undergraduates at Fermilab*
 LSSTC Enabling Science Grant (\$29.7k; Co-I: A. Drlica-Wagner)
- 2019 *LSST Stack Club*
 LSSTC Enabling Science Grant (\$7k; Co-I: A. Drlica-Wagner)
- 2019 *Pixel-Configurable Skipper CCDs for Cosmological Applications*
 Laboratory Directed Research and Development Grant (\$681k; PI: A. Drlica-Wagner)
- 2019 *DECam Local Volume Exploration (DELVE) Survey*
 Blanco Telescope 2019A (126 nights; PI: A. Drlica-Wagner)
- 2019 *The stellar populations of ultra-diffuse galaxies in Fornax cluster*
 Magellan Baade Telescope 2019A (2 nights; PI: A. Drlica-Wagner)

- 2018 *Mapping Dark Matter with the Faintest Galaxies*
Strategic Collaborative Initiative Seed Grant (\$74k; PI: A. Drlica-Wagner)
- 2018 *PALS: Paralensing Survey of Intermediate Mass Black Holes*
Blanco Telescope 2018A–2019B (32 nights; PI: W. Dawson; Co-I: A. Drlica-Wagner)
- 2017 *Dark Matter and Satellite Galaxies in the Era of LSST*
France and Chicago Collaborating in the Sciences Grant (\$15k; PI: A. Drlica-Wagner)
- 2017 *LSST: The Dark Matter Telescope*
LSST Enabling Science Grant (\$9k; PI: A. Drlica-Wagner)
- 2017 *Blanco Imaging of the Southern Sky (BLISS)*
Blanco Telescope 2017A (11.5 nights; Co-PI: A. Drlica-Wagner, M. Soares-Santos)
- 2016 *Search for Dark Matter Annihilation in Newly Discovered Milky Way Satellite Galaxies*
Fermi Cycle-9 Guest Investigator Program (\$48k; PI: A. Drlica-Wagner)
- 2016 *Cetus II - The Least Luminous Galaxy?*
Magellan Baade Telescope 2016B (2 nights; PI: A. Drlica-Wagner)
- 2016 *Magellanic Satellites Survey: The Search for Hierarchical Structures within the Local Group*
Blanco Telescope 2016A (12 nights; PI: K. Bechtol; Deputy PI: A. Drlica-Wagner)
- 2016 *A Group of Milky Way Satellites in the Constellation Tucana*
Magellan Baade Telescope 2016A (2 nights; Author: A. Drlica-Wagner; PI: J. Frieman)
- 2015 *Spectroscopic Confirmation of Milky Way Satellite Galaxy Candidate DES J0335.7–5403*
Gemini South 2015A Director's Discretionary Time (10 hours; PI: A. Drlica-Wagner)
- 2014 *Disentangling Dark Matter Gamma-Ray Signals from Astrophysical Foregrounds: Combining Searches in a Public Framework.*
Fermi Cycle-7 GI Program (\$420k; A. Drlica-Wagner analysis lead; PI: E. Charles)
- 2013 *The Smith Cloud: a High-Velocity Cloud Confined by Dark Matter.*
Fermi Cycle-6 GI Program (\$50k; A. Drlica-Wagner analysis lead; PI: T. Linden)

PROFESSIONAL SERVICE AND LEADERSHIP

- 2019–present Convener, LSST DESC Dark Matter Working Group
- 2019–present Chair, A&A Graduate Admissions Committee, University of Chicago
- 2019–present Member, A&A Education and Outreach Committee, University of Chicago
- 2019–present Member, KICP Fellows Mentoring and Climate Committee, University of Chicago
- 2019–present Organizer, Fermilab Cosmic Physics Center
- 2019–present Convener, LSST DESC Survey Simulation Working Group
- 2018–present Principle Investigator, DECam Local Volume Exploration Survey
- 2018–present Organizer, LSST Data Management Stack Club
- 2018–2019 Member, A&A Graduate Admissions Committee, University of Chicago
- 2018 Member, Fermilab Cosmic Frontier Strategy Group
- 2018 Member, DES External Collaborator Committee (proposal review and approval)
- 2017–present Member, [Fermilab SIST Committee](#) (summer research targeting underrepresented groups)
- 2017 Review Panelist, Fermi Cycle-10 Guest Investigator Program
- 2016–2018 Computational Science Strategy Group, Fermilab
- 2016 Community Study Author, *“Maximizing Science in the Era of LSST”*

- 2015–2018 Member, DES Science Committee (coordination of science working groups)
- 2015–present Reviewer for *Science*, *Physical Review Letters*, *Physical Review D*, *Astrophysical Journal*, and *Astrophysical Journal Letters*
- 2015–2016 Member, DES Executive Committee (oversight of survey and camera operation)
- 2015 Fermilab Congressional Delegation
- 2013–2018 [Journal Club Organizer](#) for the Fermilab Center for Particle Astrophysics
- 2012–present DES and *Fermi*-LAT Collaboration Internal Reviewer
- 2012–2015 Executive officer of student and postdoc organizations at Stanford, [SLAC](#), and [Fermilab](#)

CONFERENCES AND WORKSHOPS ORGANIZED

- 2020 LSST DESC Collaboration Meeting, Chicago, IL
- 2020 Chicagoland Survey Science Meeting, Batavia, IL
- 2019 DELVE Collaboration Meeting, Tucson, AZ
- 2019 [KICP LSST Dark Matter Workshop](#), Chicago, IL
- 2018 [Probing the Nature of Dark Matter with LSST](#), Livermore, CA
- 2018 [Near-Field Cosmology with DECam](#), Chicago, IL
- 2018 [Probing the Nature of Dark Matter with LSST](#), Pittsburgh, PA
- 2017 [Dark Matter Complementarity Workshop at TeVPA 2017](#), Columbus, OH
- 2017 [Searching for Dwarf Companions of the Milky Way and Beyond](#), Tucson, AZ
- 2017 [DES Collaboration Meeting](#), Chicago, IL
- 2017 [LSST Dark Energy Science Collaboration Hack Week](#), Batavia, IL
- 2017 [DES Chicagoland Workshop](#), Batavia, IL
- 2015 [DES Chicagoland Workshop](#), Batavia, IL

TEACHING EXPERIENCE

- 2020 *ASTR12710: Galaxies*, University of Chicago
- 2019 *ASTR285: Science with Large Astronomical Surveys*, University of Chicago

SUPERVISION AND MENTORING

Postdoctoral Scholars:

- 2019–present Javier Sánchez López – Postdoctoral research associate at Fermilab. Large scale structure, image simulations, and cosmology with LSST DESC and DES.
- 2016–2019 Ting Li – Lederman Fellow at Fermilab. Near-field cosmology with dwarf galaxies and stellar streams. Dr. Li went on to be a Hubble Fellow and Carnegie-Princeton Fellow.

Graduate Students:

- 2019–present Dimitrios Tanoglidis – Ph.D. student in Astronomy & Astrophysics at the University of Chicago. Detection of low-surface-brightness galaxies in DES.
- 2019 Katelyn Stringer – Ph.D. student in Physics & Astronomy at Texas A&M University. Ms. Stringer was a Fermilab URA Visiting Scholar working on the detection of RR Lyrae in DES.

- 2018–2019 Kuang Wei – Ph.D. student in Physics at the University of Chicago. Detection of low-surface-brightness galaxies in DES and LSST. Galaxy-halo connection for ultra-diffuse galaxies. Mr. Wei went on to be a data scientist at Stong Analytics.
- 2016–present Nora Shipp – Ph.D. student in Astronomy & Astrophysics at the University of Chicago. Detection, measurement, and modeling of stellar streams using DES. Ms. Shipp is a DOE SCGSR Fellow and LSST Data Science Fellow.

Undergraduate Students:

- 2019–present Judah O’Neil – Physics major at North Central College; summer SIST intern and undergraduate research assistant at Fermilab. Skipper CCD development for cosmological applications.
- 2019–present Praveen Balaji – Physics major at the University of Chicago. Searches for stellar streams using convolutional neural networks.
- 2019–present William Cerny – Astrophysics major at the University of Chicago. Searches for dwarf galaxies in DELVE.
- 2019–present Kiyon Tavangar – Astrophysics major and Provost Scholar at the University of Chicago. Searches for dwarf galaxies in DELVE and DECaLS.
- 2017–present Sidney Mau – Physics major and Provost Scholar at the University of Chicago. Searches for dwarf galaxies using DES, MagLiteS, BLISS and DELVE.
- 2017 Karen Perez Sarmiento – Physics major at the Macalester College; summer SIST intern at Fermilab. R-process elements and neutron star mergers in dwarf galaxies.
- 2016 Brandon Buncher – Physics major at the College of William and Mary; summer SULI intern at Fermilab. Characterization of the dwarf galaxy Tucana III. Mr. Buncher is now an NSF Graduate Fellow at University of Illinois, Urbana-Champaign.
- 2014 Oscar Meza Aldama – Summer intern at Fermilab from Benemerita Universidad. Developing machine-learning algorithms for star-galaxy separation in DES.
- 2012 Andrea Klein – Physics major at Stanford University. Undergraduate thesis on Milky Way dark matter subhalo abundances. Ms. Klein is now a machine learning engineer and has worked at Google and Apple.

RECENT PUBLIC PRESS

- 2019 [“Dwarf galaxies pose new questions about dark matter and the early universe that models are struggling to answer”](#) – *Proceedings of the National Academy of Sciences*
- 2019 [“Missing Galaxies? Now There’s Too Many”](#) – *Quanta Magazine*
- 2018 [“Sky Rivers”](#) – *Science Magazine*
- 2018 [“What’s the Universe Made Of?”](#) – *Nova*
- 2018 [“The Dark Energy Survey Revealed New Origins of Stars in Our Galaxy”](#) – *Seeker*
- 2018 [“New stellar streams confirm ‘melting pot’ history of the galaxy”](#) – *Science Daily*
- 2018 [“Rivers in the Sky”](#) – *Symmetry Magazine*
- 2018 [“New Stellar Streams Confirm ‘Melting Pot’ History of the Galaxy”](#) - *NOAO Press Release*
- 2018 [“Dark Energy Survey publicly releases first three years of data”](#) – *Fermilab Press Release*
- 2017 [“Seeing the Beginning of Time”](#) – *Documentary by Thomas Lucas Productions*
- 2016 [“Our Galactic Neighborhood”](#) – *Symmetry Magazine*

- 2016 “The Booming Science of Dwarf Galaxies” – *Symmetry Magazine*
- 2015 “Gamma Rays May Be Clue on Dark Matter” – *The New York Times*
- 2015 “New Dwarf Galaxies Near Milky Way” – *Sky & Telescope*
- 2015 “Have Astronomers Finally Found Dark Matter?” – *National Geographic*
- 2015 “Dwarf Galaxies Loom Large in the Quest for Dark Matter” – *Kavli Science Spotlight*
- 2015 “Deciphering Gamma Rays from a Dwarf Galaxy” – *APS Physics Viewpoint*
- 2015 “DECam Pinpoints Asteroid” – *Symmetry Magazine*

PUBLIC OUTREACH

- 2018 Evans Public Lecture at UC Irvine
- 2018 Chalk Talk for the Friends of the KITP at UC Santa Barbara
- 2018 [International Stellar Stream Naming Competition](#)
- 2017 [Adler After Dark](#), Adler Planetarium
- 2016 DOE Laboratory Internship Networking, National Society of Black Physicists
- 2015–present Contributing Author to the [DES DArchive](#) (DES Results in a Nutshell)
- 2014–2018 Public Tour Guide, [Fermilab Saturday Morning Physics](#)
- 2013–present Contributing Author to [Dark Energy Detectives](#)
- 2012–2013 [Public Tour Guide](#), SLAC National Accelerator Laboratory
- 2012–2013 [Visualization Laboratory Operator](#), Kavli Institute for Particle Astrophysics and Cosmology
- 2010 [SLAC Kids’ Day Volunteer](#)
- 2005–2008 [Public Observatory Operator](#), Crow Observatory, Washington University in St. Louis
- 2005 Public Tour Guide, American Museum of Natural History

SCIENTIFIC SOCIETY MEMBERSHIP

- 2015–present Member, American Astronomical Society (AAS)
- 2011–present Member, American Physical Society (APS)
- 2008 (inducted) Sigma Xi, Scientific Research Society
- 2008 (inducted) National Scholars, Honor Society

DEPARTMENTAL COLLOQUIA

- 2020 “*Small Galaxies, Big Science: Probing Fundamental Physics with Dwarf Galaxies*”
Physics Colloquium at University of Michigan, Ann Arbor, MI
- 2019 “*Small Galaxies, Big Science: Probing Fundamental Physics with Dwarf Galaxies*”
Physics & Astronomy Colloquium at Texas A&M, College Station, TX
- 2018 “*Small Galaxies, Big Science*”
KICP Colloquium at University of Chicago, Chicago, IL
- 2018 “*Small Galaxies, Big Science: The Booming Industry of Milky Way Satellite Galaxies*”
Colloquium at the Institute for Astronomy, Manoa, HI
- 2018 “*Small Galaxies, Big Science: Using Cosmic Surveys to Study the Fundamental Nature of Dark Matter*” Physics and Astronomy Colloquium at the University of Hawaii, Manoa, HI
- 2018 “*Small Galaxies, Big Science: Using Cosmic Surveys to Study the Fundamental Nature of Dark Matter*” Physics Colloquium at the University of New Mexico, Albuquerque, NM
- 2018 “*Small Galaxies, Big Science: Using Cosmic Surveys to Study the Fundamental Nature of Dark Matter*” Physics Colloquium at University of Pittsburgh, Pittsburgh, PA
- 2017 “*Astrophysics at Fermilab*”
Fermilab 50th Anniversary Symposium, Batavia, IL
- 2017 “*Searching for the Darkest Galaxies*”
Physics Colloquium at Indiana University, Bloomington, IN
- 2017 “*The Milky Way’s Dark Companions*”
KICP Colloquium at University of Chicago, Chicago, IL
- 2016 “*Searching for the Darkest Galaxies*”
Physics Colloquium at University of Illinois at Chicago, Chicago, IL

RECENT INVITED SEMINARS

- 2020 “*Small Galaxies, Big Science: Probing Fundamental Physics with Dwarf Galaxies*”
HEPAP Seminar at Pennsylvania State University, State College, PA
- 2019 “*Small Galaxies, Big Science: Fundamental Physics from Near Field Cosmology*”
LUPM Seminar at University of Montpellier, Montpellier, FR
- 2018 “*Small Galaxies, Big Science: Using Cosmic Surveys to Study the Fundamental Nature of Dark Matter*” Panofsky Seminar at SLAC National Accelerator Laboratory, Menlo Park, CA
- 2018 “*Using Cosmic Surveys to Understand the Fundamental Nature of Dark Matter*”
Cosmology Seminar at the University of Pittsburgh, Pittsburgh, PA
- 2018 “*Small Galaxies, Big Science: Using Cosmic Surveys to Study the Fundamental Nature of Dark Matter*” Astronomy Seminar at Michigan State University, East Lansing, MI
- 2018 “*Using Cosmic Surveys to Understand the Fundamental Nature of Dark Matter*”
Research Progress Meeting at Lawrence Berkeley National Laboratory, Berkeley, CA
- 2018 “*Small Galaxies, Big Science: The Booming Industry of Milky Way Satellite Galaxies*”
Berkeley Cosmology Seminar, Berkeley, CA
- 2018 “*Using Cosmic Surveys to Understand the Fundamental Nature of Dark Matter*”
Physics Seminar at Indiana University, Bloomington, IN
- 2017 “*Probing Dark Matter with Dwarf Galaxies*”
Physics Seminar at Lawrence Livermore National Laboratory, Livermore, CA
- 2017 “*Searching for the Milky Way’s Dark Companions*”
HEP Seminar at Brookhaven National Lab, Brookhaven, NY

- 2016 *“Fundamental Physics with the Smallest Galaxies”*
CCAPP Seminar at the Ohio State University, Columbus, OH
- 2015 *“Searching for Dwarf Galaxies in Optical and Gamma Rays”*
Cosmology Seminar at Carnegie Mellon University, Pittsburgh, PA
- 2015 *“Searching for Milky Way Satellites with the Dark Energy Survey”*
Fermilab Wine & Cheese Seminar, Batavia, IL
- 2015 *“Searching for Dark Matter in Galactic Substructure”*
Fermilab Wine & Cheese Seminar, Batavia, IL

RECENT INVITED CONFERENCE TALKS

- 2020 *“Nature of Dark Matter”*
Invited panelist at the Aaronson Symposium, Tucson, AZ
- 2019 *“Astrophysical Probes of Fundamental Dark Matter Physics”*
Invited Plenary Talk at the APS DPF Meeting, Boston, MA
- 2018 *“Searching for Magellanic Satellites with DECam”*
Invited talk at DECam Near-Field Cosmology Workshop, Chicago, IL
- 2018 *“Milky Way Science with the Dark Energy Survey”*
Special Session at 231st AAS Meeting, Washington, D.C.
- 2017 *“Searching for Milky Way Satellite Galaxies”*
Plenary talk at Barolo Astroparticle Meeting, Barolo, Italy
- 2017 *“Searching for Dark Matter in Dwarf Galaxies”*
Plenary talk at Aspen Winter Conference, Aspen, CA
- 2016 *“Dark Matter Results from Fermi”*
Overview talk at the Bloom Symposium, Menlo Park, CA
- 2016 *“DES and Fermi results on Dwarf Galaxies”*
Plenary talk at the 12th UCLA Dark Matter Conference, Los Angeles, CA
- 2015 *“Searching for Dwarf Spheroidal Galaxies with DES and the Fermi-LAT”*
Plenary talk at the 6th Fermi Symposium, Washington, DC
- 2015 *“Searching for Dwarf Spheroidal Galaxies”*
Plenary talk at the GMT Community Science Meeting, Monterey, CA
- 2015 *“Searching for Dwarf Spheroidal Galaxies”*
Mitchell Workshop on Collider and Dark Matter Physics, College Station, TX
- 2015 *“Searching for Milky Way Satellites with the Dark Energy Survey”*
“Hot Topics in Astrophysics” talk at the April APS Meeting, Baltimore, MD

RECENT CONTRIBUTED TALKS

- 2019 *“Skipper CCDs for Cosmological Applications”*
CPAD Instrumentation Frontiers Workshop, Madison, WI
- 2019 *“Overview of LSST Dark Matter Science”*
LSST DESC Collaboration Meeting, Berkeley, CA
- 2018 *“Detecting Low-Surface-Brightness Galaxies with the LSST Stack”*
LSST Project Community Workshop, Tucson, AZ
- 2017 *“Searching for Dwarf Spheroidal Galaxies with DES and the Fermi-LAT”*
TeV Particle Astrophysics (TeVPA), Colomubus, OH
- 2017 *“Searching for the Darkest Galaxies: Covering the Entire Southern Sky with DECam”*
TeV Particle Astrophysics (TeVPA), Colomubus, OH

- 2017 *“Searching for Milky Way Satellite Galaxies with DECam”*
American Physical Society DPF2017, Batavia, IL
- 2016 *“Searching for Dwarf Spheroidal Galaxies with DES and the Fermi-LAT”*
38th International Conference on High Energy Physics (ICHEP), Chicago, IL
- 2016 *“Using LSST to Probe the Fundamental Nature of Dark Matter”*
LSST Cross-Correlation Workshop, Brookhaven, NY
- 2015 *“DES and Fermi-LAT Observations of Milky Way Satellite Galaxies”*
KIPAC Tea Talk Seminar, Stanford CA
- 2015 *“Recent Results on Indirect Dark Matter Searches with Dwarf Galaxies”*
LHC Physics Center seminar at Fermilab, Batavia, IL
- 2014 *“Searching for Dark Matter Annihilation in the Smith High-Velocity Cloud”*
KIPAC tea talk seminar, Stanford CA
- 2014 *“Searching for Dark Matter Annihilation in the Smith High-Velocity Cloud”*
Contributed talk at the COSMO 2014 Meeting, Chicago IL

PUBLIC TALKS

- 2018 *“Dark Matter and Tiny Galaxies”*
UC Irvine Evans Lecture, Irvine, CA
- 2018 *“Small Galaxies, Big Science”*
Friends of KITP Chalk Talk, Santa Barbara, CA
- 2016 *“The Mystery of Missing Mass”*
Laser Safety Officer Workshop, Batavia, IL
- 2009 *“The Mystery of Missing Mass”*
Public Health Research Institute, Newark, NJ

Publication List

I have authored >150 publications, received >22,000 citations, and have an h-index of 73. I am an active member of the Fermi-LAT, DES, and LSST DESC Collaborations, which leads to many long author lists. Each collaboration has several classes of papers, some of which have alphabetized author lists. For clarity, I have highlighted publications in which I led the scientific analysis and/or writing. Please refer to the publication policies of these collaborations for more details: [Fermi-LAT Publication Policy](#), [DES Publication Policy](#), [LSST DESC Publication Policy](#).

Journal Abbreviations – PhRvL: *Physical Review Letters*; PhRvD: *Physical Review D*; JCAP: *Journal of Cosmology and Astroparticle Physics* ApJ: *The Astrophysical Journal*, MNRAS: *Monthly Notices of the Royal Astronomical Society*; AJ: *The Astronomical Journal*; PASP: *Publications of the Astronomical Society of the Pacific*

* – Indicates students I supervised on specific analyses.

PRIMARY CONTRIBUTOR

Publications where I was a primary contributor to the scientific design, analysis, and/or writing.

1. S. Mau*, W. Cerny*, et al., “Two Ultra-Faint Milky Way Stellar Systems Discovered in Early Data from the DECam Local Volume Exploration Survey”, *accepted to ApJ* (2019), [[arXiv:1912.03301](#)]. **DELVE Collaboration.**
2. E. O. Nadler et al., “Milky Way Satellite Census – II. Galaxy-Halo Connection Constraints Including the Impact of the Large Magellanic Cloud”, *submitted to ApJ* (2019), [[arXiv:1912.03303](#)]. **DES Collaboration.**
3. A. Drlica-Wagner, K. Bechtol, et al., “Milky Way Satellite Census – I. The Observational Selection Function for Milky Way Satellites in DES Y3 and Pan-STARRS DR1”, *submitted to ApJ* (2019), [[arXiv:1912.03302](#)]. **DES Collaboration.**
4. A. Drlica-Wagner et al., “Probing the Fundamental Nature of Dark Matter with the Large Synoptic Survey Telescope”, [arXiv:1902.01055](#). **LSST Dark Matter Group.**
5. N. Shipp* et al., “Proper Motions of Stellar Streams Discovered in the Dark Energy Survey”, *ApJ* **885**, 3 (2019), [[arXiv:1907.09488](#)]. **S⁵ Collaboration.**
6. S. Mau*, A. Drlica-Wagner, et al., “A faint halo star cluster discovered in the Blanco Imaging of the Southern Sky Survey”, *ApJ* **875**, 154 (2019), [[arXiv:1812.06318](#)]. **BLISS Collaboration.**
7. M. Carrasco Kind, A. Drlica-Wagner, A. M. G. Koziol, et al., “easyaccess: Enhanced SQL command line interpreter for astronomical surveys”, *JOSS* **4**, 1022 (2019), [[arXiv:1810.02721](#)]. **Core Developer; DES Collaboration.**
8. N. Shipp*, A. Drlica-Wagner, E. Balbinot, et al., “Stellar Streams Discovered in the Dark Energy Survey”, *ApJ* **862**, 114 (2018), [[arXiv:1801.03097](#)]. **Corresponding Author; DES Collaboration.**
9. **DES Collaboration:** T. M. C. Abbott et al., “The Dark Energy Survey Data Release 1”, *ApJS* **239**, 18 (2018), [[arXiv:1801.03181](#)]. **Analysis Contributions; Paper Writing and Figures.**
10. **DES Collaboration:** E. Morganson et al., “The Dark Energy Survey Image Processing Pipeline”, *PASP* **130**, 074501 (2018), [[arXiv:1801.03177](#)]. **Analysis Contributions; Paper Writing and Figures.**
11. A. Drlica-Wagner, I. Sevilla-Noarbe, E. S. Rykoff, et al., “Dark Energy Survey Year 1 Results: Photometric Data Set for Cosmology”, *accepted to ApJS* (2017), [[arXiv:1708.01531](#)]. **Corresponding Author; Analysis Lead; DES Collaboration.**
12. J. Tiffenberg, M. Sofo-Haro, A. Drlica-Wagner, et al., “Single-Electron and Single-Photon Sensitivity with a Silicon Skipper CCD”, *PhRvL* **119**, 131802 (2017), [[arXiv:1706.00028](#)]. **Data Analysis; Astrophysical Applications.**

13. T. S. Li, J. D. Simon, **A. Drlica-Wagner**, et al., “Farthest Neighbor: The Distant Milky Way Satellite Eridanus II”, *ApJ* **838**, 8 (2017), [[arXiv:1611.05052](https://arxiv.org/abs/1611.05052)]. **Analysis Contributions; Paper Writing; DES Collaboration.**
14. J. D. Simon, T. S. Li, **A. Drlica-Wagner**, et al., “Nearest Neighbor: The Low-Mass Milky Way Satellite Tucana III”, *ApJ* **838**, 11 (2017), [[arXiv:1610.05301](https://arxiv.org/abs/1610.05301)]. **Analysis Contributions; Paper Writing; DES Collaboration.**
15. A. Albert, K. Bechtol, **A. Drlica-Wagner**, et al., “Searching for Dark Matter Annihilation in Recently Discovered Milky Way Satellites with Fermi-LAT”, *ApJ* **834**, 110 (2017), [[arXiv:1611.03184](https://arxiv.org/abs/1611.03184)]. **Corresponding Author; Analysis Lead; LAT Category II Paper; DES Collaboration.**
16. **A. Drlica-Wagner**, K. Bechtol, S. Allam, et al., “An Ultra-Faint Galaxy Candidate Discovered in Early Data from the Magellanic Satellites Survey”, *ApJ* **833**, L5 (2016), [[arXiv:1609.02148](https://arxiv.org/abs/1609.02148)]. **Corresponding Author; Analysis Lead; MagLiteS Collaboration.**
17. **DES Collaboration:** T. Abbott et al., “The Dark Energy Survey: More Than Dark Energy - An Overview”, *MNRAS* **460**, 1270–1299 (2016), [[arXiv:1601.00329](https://arxiv.org/abs/1601.00329)]. **Milky Way Section Author.**
18. P. Melchior, E. Sheldon, **A. Drlica-Wagner**, E. S. Rykoff, et al., “Crowdsourcing Quality Control for Dark Energy Survey Images”, *Astronomy and Computing* 99–108 (2016), [[arXiv:1511.03391](https://arxiv.org/abs/1511.03391)]. **Contributions to software development and paper writing; DES Collaboration.**
19. **A. Drlica-Wagner**, K. Bechtol, E. S. Rykoff, et al., “Eight Ultra-faint Galaxy Candidates Discovered in Year Two of the Dark Energy Survey”, *ApJ* **813**, 109 (2015), [[arXiv:1508.03622](https://arxiv.org/abs/1508.03622)]. **Corresponding Author; Analysis Lead; DES Collaboration.**
20. J. D. Simon, **A. Drlica-Wagner**, T. S. Li, et al., “Stellar Kinematics and Metallicities in the Ultra-Faint Dwarf Galaxy Reticulum II”, *ApJ* **808**, 95 (2015), [[arXiv:1504.02889](https://arxiv.org/abs/1504.02889)]. **DES photometry and targeting; Paper writing; DES Collaboration.**
21. **A. Drlica-Wagner**, A. Albert, K. Bechtol, et al., “Search for Gamma-Ray Emission from DES Dwarf Spheroidal Galaxy Candidates with Fermi-LAT Data”, *ApJ* **809**, L4 (2015), [[arXiv:1503.02632](https://arxiv.org/abs/1503.02632)]. **Corresponding Author; Analysis Lead; LAT Category II Paper; DES Collaboration.**
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DES MILKY WAY WORKING GROUP

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CO-AUTHOR FERMI-LAT COLLABORATION

Publications that I have contributed to as a member of the Fermi-LAT Collaboration. Authorship on Category II papers is limited to those who directly participated in analysis and paper writing.

1. **Fermi-LAT Collaboration:** E. Charles et al., “Sensitivity Projections for Dark Matter Searches with the Fermi Large Area Telescope”, *Phys. Rept.* **636**, 1–46 (2016), [[arXiv:1605.02016](#)]. **LAT Category II Paper.**
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