

# Matthew C. Digman

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**CONTACT INFORMATION** 1040 Physics Research Building (515) 240-9500  
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**RESEARCH INTERESTS** Gravitational Waves, Ultracompact Binaries, LISA  
Dark Energy, Weak Gravitational Lensing, Super-Sample Covariance, WFIRST  
Dark Matter, Strongly Interacting Dark Matter

**EDUCATION** Ohio State, Columbus, Ohio, USA  
PhD in Physics, Advisor: Chris Hirata **Aug 2020** (expected)  
MS in Physics **Jul 2017**  
Dartmouth College, Hanover, New Hampshire USA  
BA with High Honors in Physics **Jun 2015**  
Honors thesis: *Gravitational Waves in Anisotropic Spacetimes*  
Thesis advisor: Robert Caldwell

**POSITIONS HELD** **Graduate Research Assistant** **2017–present**  
Ohio State University  
**Graduate Teaching Assistant** **2015–2017**  
Departments of Physics and Astronomy, Ohio State University  
**Cosmology Research** **2013–2015**  
Dartmouth College; Investigated behavior of Bianchi spacetimes  
**Plasma Physics Research** **2014–2015**  
Dartmouth College; Data analysis for Van Allen Probes

**FIRST-AUTHOR PUBLICATIONS** 1. *Forecasting Super-Sample Covariance in Future Weak Lensing Surveys with Super-SCRAM*  
**Digman, M.C.**, McEwen, J.E., Hirata, C.M.  
2019, JCAP 10, 004 [[arXiv:1904.12071](https://arxiv.org/abs/1904.12071)]  
2. *Not as Big as a Barn: Upper Bounds on Dark Matter-Nucleus Cross Sections*  
**Digman, M.C.**, Cappiello, C.V., Beacom, J.F., Hirata, C.M., Peter, A.G.H  
2019, PRD 100, 063013 [[arXiv:1907.10618](https://arxiv.org/abs/1907.10618)]  
3. *LISA Galactic Sources in the WFIRST Microlensing Survey*  
**Digman, M.C.**, Hirata, C.M.  
2019, In Prep

**OTHER PUBLICATIONS** 4. *Upper Bounds on Low Mass Dark Matter-Nucleus Cross Sections*  
Cappiello, C.V., **Digman, M.C.**, Beacom, J.F., Hirata, C.M., Peter, A.G.H  
2019, In Prep

**TALKS** 1. *LISA Galactic Binaries in the WFIRST Microlensing Survey* **Nov 2019**  
TAPIR Seminar, Caltech  
2. *LISA Galactic Binaries in the WFIRST Microlensing Survey* **Nov 2019**  
Observational Astronomy Talk, Northwestern  
3. *Not as Big as a Barn: Upper Bounds on Dark Matter-Nucleus Cross Sections*  
Particle/Astrophysics Theory Seminar, Case Western **Jan 2020**  
4. *Super-Sample Covariance in Future Weak Lensing Surveys* **Apr 2019**  
APS April 2019

**POSTER PRESENTATIONS** Cosmo 2018, Daejon, Korea **2018**

**CONFERENCES ATTENDED** APS April, Denver, Colorado **2019**  
Cosmo 2018, Daejon, Korea **2018**  
LISA Symposium, Chicago, Illinois **2018**  
APS April, Columbus, Ohio **2018**  
TeVPA, Columbus, Ohio **2017**  
MIT Undergraduate Cosmology Workshop, Cambridge, Massachusetts **2014**

**PROGRAMMING** Proficient in Python, Mathematica, and Matlab, as well as a variety of other languages and tools.

**HONORS** Physics and Astronomy Chair's Prize, Dartmouth College **2015**

**SERVICE** **Cosmolunch Co-organizer** **2018–present**  
Ohio State University  
**Thayer Physics Ambassador** **2014**  
Dartmouth College

**REFERENCES** **Prof. Chris Hirata**  
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**Prof. Annika Peter**  
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