

# Thomas Finzell

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*Physics & Astronomy PhD*

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## Academic Appointments

- 2023–Present **Visiting Assistant Professor in the Department of Computer Science, Carleton College**
- 2021–2023 **Assistant Professor in the Department of Computational Mathematics, Science and Engineering (NTT), Michigan State University**
- 2020–2021 **Postdoctoral Researcher in the Department of Computational Mathematics, Science and Engineering, Michigan State University**
- 2019–2020 **Visiting Assistant Professor, Macalester College**
- 2017–2019 **Postdoctoral Researcher in Physics Education, University of Michigan**

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## Education

- 2015–2017 **PhD, Michigan State University**  
Doctorate in Physics & Astronomy
- 2011–2015 **MSc, Michigan State University**  
Masters in Physics & Astronomy
- 2007–2011 **B.S., University of Wisconsin**  
Double Major in Physics & Astronomy; Certificate in Computer Science

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## References

- Dr. Danny Cabellero**, [caballero@pa.msu.edu](mailto:caballero@pa.msu.edu)  
(517)-884-5657
- Dr. John Cannon**, [jcannon@macalester.edu](mailto:jcannon@macalester.edu)  
(651)-696-6798
- Dr. Devin Silvia**, [dsilvia@msu.edu](mailto:dsilvia@msu.edu)  
(517)-432-0212

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## Courses Taught

- W24 **CS 320, Carleton College**  
Machine Learning
- F23, W24, S24 **CS 111, Carleton College**  
Introduction to Computer Science
- F22, S23 **CMSE 202, Michigan State University**, Multi-Section Lead S23  
Computational Modeling and Data Analysis II

F20, S21, **CMSE 201**, *Michigan State University*, Multi-Section Lead S22  
 F21, S22 Introduction to Computational Modeling

Spring 2020 **PHYS 394**, *Macalester College*, (Co-)Creator  
 Computational Physics

Spring 2020 **PHYS 461**, *Macalester College*  
 Mechanics

Fall 2019 **PHYS 226**, *Macalester College*  
 Principles of Physics I

Fall 2019 **PHYS 443L**, *Macalester College*  
 Electromagnetic Theory Lab

Winter 2019 **PHYS 260**, *University of Michigan*  
 (Co)-Instructor of Record, Honors Introductory Physics II

Fall 2018 **PHYS 160**, *University of Michigan*  
 (Co)-Instructor of Record, Honors Introductory Physics I

Summer 2018, 2019 **PHYS 140**, *University of Michigan*  
 General Physics I

2014–2015 **LB 273L**, *Michigan State University*, Lyman-Briggs  
 Redesigned a lab and co-taught it as part of the Professional Development Program

2011–2013 **ISP 205L**, *Michigan State University*  
 Primary instructor. Astronomy lab course for non-majors

## Undergraduate Students Supervised or Co-Supervised

2020 **Paige Stevenson**, *Adviser*  
 Summer Research

2020 **Penny Ahlfeld**, *Adviser*  
 Summer Research

2019–2020 **James Cannon**, *Co-Adviser*  
 Senior Thesis Work

2017–2019 **Sameer Barretto**, *Supervisor*  
 Undergraduate Research Assistant

2017–2019 **Jessica Zhang**, *Supervisor*  
 Undergraduate Research Assistant

2015 **Daniel Coulter**

2015–2016 **Carolyn Wendeln**

2013–2015 **Naomi Williams**

2012–Present **Leah Nonis**, *Mentor*  
 As part of the WaMPS mentoring program

2012–2016 **Tess O'Neal**, *Mentor*  
 As part of the WaMPS mentoring program

## Graduate Students Taught or Mentored

- 2019 **Prachi Atmasiddha**  
As part of the DIALUP Curriculum Design Team
- 2019 **Benjamin Scheff**  
As part of the DIALUP Curriculum Design Team
- 2019 **Cameron Spitzfaden**  
As part of the DIALUP Curriculum Design Team
- 2018–2019 **Kelsey Bates**  
As part of the DIALUP Curriculum Design Team
- 2017–2019 **Grace Kerber**  
As part of the DIALUP Curriculum Design Team
- 2018–2019 **Harry Liu**  
As part of the DIALUP Curriculum Design Team
- 2018–2019 **Joseph Paki**  
As part of the DIALUP Curriculum Design Team
- 2017–2019 **Alec Tewsley-Booth**  
As part of the DIALUP Curriculum Design Team
- 2018–2019 **Benjamin Girodias**  
As part of the DIALUP Curriculum Design Team
- 2017–2018 **Chelsea Hendrus**  
As part of the DIALUP Curriculum Design Team
- 2017–2018 **Gle Leung**  
As part of the DIALUP Curriculum Design Team
- 2017–2018 **Jordan Roth**  
As part of the DIALUP Curriculum Design Team

## Research Awards

- 2018 **Gilbert Whitaker Fund for the Improvement of Teaching**, *Grant*
- 2013 **Future Academic Scholars & Teachers**, *Fellowship*
- 2013 **AAS International Travel Grant**
- 2009 **Wisconsin Space Grant Consortium**, *Undergraduate Research Award*

## Service/Outreach

- 2019–2020 **Women in Physics and Astronomy Reading Group**, *Co-Creator/Co-Leader*
- 2017–2019 **Developers of Instruction, Assessment, and Lessons for Undergraduate Physics (DIALUP)**, *Creator/Leader*
- 2015–2016 **Physics & Astronomy Day, Impression 5 Museum**, *Docent*
- 2015 **Mid-Michigan Leadership Academy**, *Outreach with Elementary Kids*
- 2014–2016 **Astronomy Journal Club**, *Chair/Organizer*
- 2013–2017 **Science Olympiad, Astronomy State Event** *Coordinator*
- 2011–2017 **Women and Minorities in the Physical Sciences (WaMPS)**, *Mentor*

- 2009–2011 **Science Olympiad**, *Astronomy Regional Event Co-Coordinator*  
 2010–2011 **Waisman Center**, *Weekly Outreach with Pre-K Children*  
 2010 **UW Madison**, *Summer Outreach Program, Grandparents University*

## --- **Presentations/Workshops/Summer Schools**

- 2023 **Special Interest Group on Computer Science Education**, *Poster*, "Using Resource Theory to Understand How Students Think About Indexing"  
 Toronto, ON
- 2019 **Physics Education Research Conference**, *Poster*  
 Provo, UT
- 2019 **Partnership for the Integration of Computation in Undergraduate Physics Summer Workshop**  
 River Falls, WI
- 2019 **American Association of Physics Teachers Summer Meeting**, *Talk*  
 Provo, UT
- 2019 **American Association of Physics Teachers Winter Meeting**, *Poster*  
 Houston, TX
- 2018 **Partnership for the Integration of Computation in Undergraduate Physics Summer Workshop**  
 River Falls, WI
- 2018 **Physics Education Research Conference**, *Poster*  
 Washington, D.C.
- 2018 **American Association of Physics Teachers Summer Meeting**, *Poster*  
 Washington, D.C.
- 2016 **Shocks and Particle Acceleration in Novae and Supernovae**, *Poster*  
 Columbia University
- 2016 **The Transient Sky**, *Poster*  
 Harvard
- 2016 **Stellar Remnants at the Junction**, *Poster*  
 Texas Tech
- 2014 **The Physics of Cataclysmic and Compact Binaries**, *Talk*  
 Columbia University
- 2014 **CLOUDY Summer School**  
 Queens University
- 2014–2015 **Professional Development Program**  
 Institute for Scientist & Engineer Educators, Monterey, CA
- 2014 **NRAO Interferometry Summer School**  
 NRAO Socorro
- 2014–2016 **Compact Objects Meeting**, *Talk*  
 2014 Michigan State; 2015 University of Michigan; 2016 Wayne State University

- 2011 **217th American Astronomical Society Meeting, Poster**  
Seattle, WA
- 2010 **215th American Astronomical Society Meeting, Poster**  
Washington, D.C

## Refereed Publications

### First Author

- 2018 **A Detailed Observational Analysis of V1324 Sco, the Most Gamma-Ray-luminous Classical Nova to Date**  
Finzell, Thomas; Chomiuk, Laura; Metzger, Brian D.; Walter, Frederick M.; Linford, Justin D.; Mukai, Koji; Nelson, Thomas; Weston, Jennifer H. S.; Zheng, Yong; Sokoloski, Jennifer L.; Mioduszewski, Amy; Rupen, Michael P.; Dong, Subo; Starrfield, Sumner; Cheung, C. C.; Woodward, Charles E.; Taylor, Gregory B.; Bohlsen, Terry; Buil, Christian; Prieto, Jose; Wagner, R. Mark; Bensby, Thomas; Bond, I. A.; Sumi, T.; Bennett, D. P.; Abe, F.; Koshimoto, N.; Suzuki, D.; Tristram, P. J.; Christie, Grant W.; Natusch, Tim; McCormick, Jennie; Yee, Jennifer; Gould, Andy
- 2015 **Distance and Reddening of the Enigmatic Gamma-ray-Detected Nova V1324 Sco**  
Finzell, Thomas; Chomiuk, Laura; Munari, Ulisse; Walter, Frederick M.
- N<sup>th</sup> Author*
- 2017 **A nova outburst powered by shocks**  
Li, Kwan-Lok; Metzger, Brian D.; Chomiuk, Laura; Vurm, Indrek; Strader, Jay; Finzell, Thomas; Beloborodov, Andrei M.; Nelson, Thomas; Shappee, Benjamin J.; Kochanek, Christopher S.; Prieto, Jos   L.; Kafka, Stella; Holoien, Thomas W.-S.; Thompson, Todd A.; Luckas, Paul J.; Itoh, Hiroshi
- 2017 **The Peculiar Multiwavelength Evolution Of V1535 Sco**  
Linford, J. D.; Chomiuk, L.; Nelson, T.; Finzell, T.; Walter, F. M.; Sokoloski, J. L.; Mukai, K.; Mioduszewski, A. J.; van der Horst, A. J.; Weston, J. H. S.; Rupen, M. P.
- 2017 **A Radio Emission Analysis of Classical Nova V351 Pup (1991)**  
Wendeln, Carolyn; Chomiuk, Laura; Finzell, Thomas; Linford, Justin D.; Strader, Jay
- 2016 **Shock-powered radio emission from V5589 Sagittarii (Nova Sgr 2012 # 1)**  
Weston, Jennifer H. S.; Sokoloski, J. L.; Chomiuk, Laura; Linford, Justin D.; Nelson, Thomas; Mukai, Koji; Finzell, Tom; Mioduszewski, Amy; Rupen, Michael P.; Walter, Frederick M.
- 2016 **Non-thermal radio emission from colliding flows in classical nova V1723 Aql**  
Weston, Jennifer H. S.; Sokoloski, J. L.; Metzger, Brian D.; Zheng, Yong; Chomiuk, Laura; Krauss, Miriam I.; Linford, Justin D.; Nelson, Thomas; Mioduszewski, Amy J.; Rupen, Michael P.; Finzell, Tom; Mukai, Koji
- 2016 **Gamma-ray novae as probes of relativistic particle acceleration at non-relativistic shocks**  
Metzger, B. D.; Finzell, T.; Vurm, I.; Hasco  nt, R.; Beloborodov, A. M.; Chomiuk, L.
- 2015 **1FGL J1417.7-4407: A Likely Gamma-Ray Bright Binary with a Massive Neutron Star and a Giant Secondary**  
Strader, Jay; Chomiuk, Laura; Cheung, C. C.; Sand, David J.; Donato, Davide; Corbet, Robin H. D.; Koeppe, Dana; Edwards, Philip G.; Stevens, Jamie; Petrov, Leonid; Salinas, Ricardo; Peacock, Mark; Finzell, Thomas; Reichart, Daniel E.; Haislip, Joshua B.

- 2015 **Photometric evolution and peculiar dust formation in the gamma-ray Nova Sco 2012 (V1324 Sco)**  
Munari, U.; Walter, F. M.; Henden, A.; Dallaporta, S.; Finzell, T.; Chomiuk, L.
- 2013 **Signatures of Multiple Stellar Populations in Unresolved Extragalactic Globular/Young Massive Star Clusters)**  
Peacock, Mark B.; Zepf, Stephen E.; Finzell, Thomas

## Accepted Proposals

- 2016 **A Candidate Eccentric Redback Pulsar with an Unusually Massive Secondary, Green Bank Telescope**  
McLaughlin, M., Finzell, T., Jones, M., Chomiuk, L., Strader, J., Swihart, S.
- 2015 **Imaging Shocks in Classical Novae, Very Large Array**  
Linford, J., Chomiuk, L., Sokoloski, J., Mioduszewski, A., Rupen, M., Mukai, K., Finzell, T., Weston, J., Nelson, T.
- 2015 **Tempests, Not Bombs: The Complex Explosions of Novae, Very Large Array**  
Linford, J., Chomiuk, L., Nelson, T., Rupen, M., Mukai, K., Sokoloski, J., Mioduszewski, A., Finzell, T., Weston, J.
- 2015 **Multi-wavelength Observations of Shocks in Classical Novae, Very Large Array**  
Linford, J., Chomiuk, L., Nelson, T., Rupen, M., Mukai, K., Sokoloski, J., Mioduszewski, A., Finzell, T.
- 2014 **Searching For Radio Pulsations in the Fermi Source J0523.5-2529, Green Bank Telescope**  
Finzell, T., Jones, M., Chomiuk, L., McLaughlin, M., Strader, J.
- 2014 **Time Variable Sodium Lines in V745 Sco: Heraldng the Progenitors of Type Ia Supernovae, Very Large Telescope**  
Chomiuk, L., Finzell, T., Walter, F.