

# Jennifer L. Hoffman

Dept. of Physics & Astronomy, 2112 E. Wesley Ave.  
University of Denver, Denver, CO 80208 | (303) 871-2268  
[jennifer.hoffman@du.edu](mailto:jennifer.hoffman@du.edu) | [www.grammai.org/jhoffman/](http://www.grammai.org/jhoffman/)

## Education and Training

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- 2002 Ph.D., University of Wisconsin-Madison, Astronomy  
Adviser: Kenneth H. Nordsieck  
*Locating Mass Loss: Numerical Modeling of Circumstellar Material in Binary Systems*
- 1997 M.S., University of Wisconsin-Madison, Astronomy
- 1994 A.B., University of California at Berkeley, Physics and Astrophysics  
Undergraduate studies included a year at Georg-August Universität in Göttingen, Germany.

## Professional Appointments

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- 2023 Astronomer in Residence, Grand Canyon Conservancy (during sabbatical)
- 2022– Womble Chair of Astronomy, University of Denver, Dept. of Physics & Astronomy
- 2021– Professor, University of Denver, Dept. of Physics & Astronomy  
Director, Chamberlin Observatory
- 2013–2021 Associate Professor with Tenure, University of Denver, Dept. of Physics & Astronomy
- 2007–2013 Assistant Professor, University of Denver, Dept. of Physics & Astronomy  
Spectropolarimetry of massive binary stars and core-collapse supernovae; radiative transfer modeling of line polarization in massive stars and supernovae; supernova classification and progenitor identification
- 2003–2007 NSF Astronomy & Astrophysics Postdoctoral Fellow and Postdoctoral Scholar,  
UC Berkeley, Dept. of Astronomy  
Sponsors: Alexei V. Filippenko (Astronomy), Peter Nugent (LBL Scientific Computing Group)  
Radiative transfer modeling of line polarization effects in supernovae; spectropolarimetric observations of Seyfert 1 galaxies and Type II<sub>n</sub> supernovae
- 2002–2003 Postdoctoral Research Associate, Rice University, Dept. of Physics and Astronomy  
Adviser: Christopher M. Johns-Krull (Physics & Astronomy)  
Spectropolarimetric observations of LL Ori stars; radiative transfer modeling of T Tauri disk winds
- 1996–2002 NASA/Goddard Graduate Student Research Fellow and Research Assistant,  
UW-Madison, Dept. of Astronomy  
Adviser: Kenneth H. Nordsieck (Astronomy); collaborator: Barbara A. Whitney (Space Science Institute); GSFC technical adviser: Theodore R. Gull (GSFC)  
Spectropolarimetric observations of Algol and Herbig Ae/Be binary stars; Monte Carlo radiative transfer modeling of the polarization signatures of Algol binaries and luminous blue variables
- 1995 Junior Specialist, UC Berkeley, Dept. of Astronomy  
Adviser: Ivan R. King; open-cluster photometry, astrometry, reduction/analysis of HST data
- 1994 REU Research Intern, Maria Mitchell Observatory  
Adviser: Eileen D. Friel; open-cluster photometry
- 1993–1994 Engineering Aide, UC Berkeley, Center for EUV Astrophysics  
Supervisor: Nahide Craig; reduction/analysis of EUVE data

## Awards and Recognition

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- 2020–22 ODEI Fellow, Office of Diversity, Equity, and Inclusion, University of Denver
- 2022 Invited Participant, Provost's Teaching Celebration Dinner  
*Selected by NSM dean as "one of DU's most outstanding faculty in the area of teaching"*
- 2018, 20 Physics & Astronomy Teacher of the Year, University of Denver  
*Nominated and selected by DU Physics & Astronomy undergraduate majors*
- 2018 Invited Panelist, Women in STEM conference, Denver Center for International Studies
- 2018 Faculty Career Champion, University of Denver  
*Nominated by DU Physics & Astronomy graduate student for supporting student career goals*
- 2017 Outstanding Faculty Service Award, College of Natural Sciences and Mathematics, University of Denver
- 2016 Invited Participant, HERS Denver Summer Institute for women's leadership in higher education
- 2015 Invited Participant, 2015 NYU Kavli Scientist-Writer Workshop, Kavli Royal Society International Centre at Chicheley Hall, United Kingdom
- 2015 Outstanding Faculty Service Award nominee, College of Natural Sciences and Mathematics, University of Denver
- 2013 Invited Panelist, "So Who Are These Women in Science and Math Anyway?"  
2013 DU Women's Conference
- 2013 Invited Participant, *Radiation Driven Outflows in Stars and Quasars* workshop, Aspen Center for Physics
- 2012 Invited Participant, *The Evolution of Massive Stars and Progenitors of GRBs* workshop, Aspen Center for Physics
- 2012 Outstanding Faculty Teaching Award nominee, College of Natural Sciences and Mathematics, University of Denver
- 2009 Faculty Adviser of the Year, Office of Student Life, University of Denver
- 2007, 09 Invited Panelist, NSF Astronomy & Astrophysics Postdoctoral Fellows Symposium
- 2000 Invited Participant, XII Canary Islands Winter School of Astrophysics in Astrophysical Spectropolarimetry
- 2000 Invited Participant, NASA Summer School for High-Performance Computational Earth and Space Sciences
- 2000 First prize, Ruth and Helen Dickie Research Seminar Competition, UW-Madison
- 1990–94 Chancellor's Scholarship, UC Berkeley

## Grant and Funding History

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2022–23	NASA XMM-Newton Co-PI with Rachel Johnson (current DU Ph.D. student) <i>WR 71: To Binary or not to Binary?</i>	\$14,996
2022–23	NSF Stellar Astronomy & Astrophysics Program Supplement to 2018 award <i>Asymmetry is Destiny</i>	\$55,384
2021–23	DU Professional Opportunities for Faculty (PROF; sole author) <i>Double Vision: New Views of Colliding-Wind Binary Star Systems</i>	\$19,999
2021–22	Smithsonian Astrophysical Observatory / Chandra X-ray Center Co-PI with Rachel Johnson (current DU Ph.D. student) <i>Double Vision: New Views of Colliding-Wind Binary Star Systems</i>	\$62,334
2020–23	NSF Stellar Astronomy & Astrophysics Program Co-PI with Douglas C. Leonard (SDSU); DU portion \$259,360 <i>Collaborative Research: Mapping the Supernova Polarization Landscape</i>	\$505,679
2018–22	NSF Stellar Astronomy & Astrophysics Program Co-PI with Jamie Lomax (USNA; former DU Ph.D. student), and Kenneth H. Nordsieck (UW-Madison); DU portion \$277,031 <i>Collaborative Research: Asymmetry is Destiny: Structure and Fate of Wolf-Rayet Binary Systems</i>	\$377,892
2018–22	AURA Instrument Upgrade Program (PI) <i>GPOL+NIRI: Commissioning the GPOL Facility Polarization Modulator on Gemini North</i>	\$96,927
2019–21	DU Center for Community Engagement and Student Learning (CCESL) Public Good BRIDGE Fund Co-PI with Shannon Murphy, Robin Tinghitella <i>DU SciTech 2019: Building STEM Identification and Scientific Self-Efficacy with Girls of Color in Denver</i>	\$20,000
2017–18	DU CCESL Public Good Fund Co-PI with Shannon Murphy, Robin Tinghitella <i>DU SciTech 2017: Pathways to STEM Careers for Girls of Color and Low-Income Girls in Denver</i>	\$15,000
2016–18	DU Professional Opportunities for Faculty (PROF; sole author) <i>Asymmetry is Destiny: Binary Systems as Explosive Progenitors</i>	\$20,000
2016–17	NSF Stellar Astronomy & Astrophysics Program supplement (sole author)	\$40,714
2016–17	DU CCESL Public Good Fund Co-PI with Shannon Murphy, Robin Tinghitella <i>DU SciTech: A STEM Summer Camp for Girls from Underrepresented Backgrounds at the University of Denver</i>	\$19,000
2016	DU CCESL and Campus Compact of the Mountain West (sole author) Funded participant, <i>High-Impact STEM Education</i> conference	\$750
2015–16	American Philosophical Society Franklin Research Grant (sole author) <i>The 3-D View of Potential Gamma-Ray Burst Progenitors</i>	\$6000

2012–16	NSF Stellar Astronomy & Astrophysics Program Co-PI with G. Grant Williams (U. Arizona) and Douglas C. Leonard (SDSU); DU portion \$250,660 <i>Collaborative Research: The Aspherical Nature and Evolution of Supernovae</i>	\$799,386
2015	DU Olin Faculty Development Fund (sole author) <i>Ultraviolet Eyes for the Southern African Large Telescope</i>	\$3700
2014–16	DU Faculty Research Fund (FRF; sole author) <i>New Tools for Identifying Explosive Progenitors</i>	\$2968
2014	International Astronomical Union Travel Grant Program (sole author)	\$1310
2014	DU Faculty Internationalization Grant (sole author) <i>Meeting in the Middle: Establishing a US-Brazil Collaboration at an International Astronomical Symposium</i>	\$1100
2014	DU FRF Co-I with Toshiya Ueta, Robert Stencel <i>Sky monitoring for astronomical research at DU's Echo Lake Field Station</i>	\$3000
2012–13	NASA Astrophysics Data Analysis Program PI with Co-I's (as subcontractors) Jamie Lomax (DU), Karen Bjorkman (U. Toledo), Michael Corcoran (NASA/GSFC), Yaël Nazé (U. Liège), Stanley Owocki (U. Delaware), Andrew Pollock (ESO), and Christopher Russell (U. Delaware) <i>The Geometry of the Stellar Winds and Shock Structure in V444 Cyg</i>	\$65,000
2011–13	DU FRF <i>SPPIN: Supernova Progenitors with Polarimetry and Interferometry</i>	\$1960
2008–12	NSF Stellar Astronomy & Astrophysics Program Co-PI with Richard Ignace (ETSU); DU portion \$380,708 <i>Tracing the Spectropolarimetric History of Circumstellar Structures from High-Mass Stars through Supernovae</i>	\$1,014,967
2009–11	DU PROF (co-PI with Frédéric Latrémolière and Mario Lopez) <i>Parallel Random Walks with Application to Astrophysics</i>	\$23,768
2010	NSF Stellar Astronomy & Astrophysics Program Co-PI with Richard Ignace (ETSU) <i>A Workshop on Stellar Polarimetry: From Birth to Death</i>	\$22,190
2010	DU Marsico Visiting Faculty Program (sole author) Visitor: Dr. Keivan Stassun, Vanderbilt University	\$1483
2008–10	DU PROF (sole author) <i>Clusters, Collaboration, and Non-Spherical Cows</i>	\$14,182
2008–09	NASA Astrophysics Data Analysis Program Co-I with PI Wayne Waldron (Eureka Scientific) Richard Ignace, (ETSU), Lida Oskinova, and Wolf-Rainer Hamann (U. Potsdam); DU portion \$27,220 <i>A Study of the Variable Hard X-Ray Emission from the Massive Interacting Binary <math>\beta</math> Lyrae</i>	\$108,915
2008	DU Marsico Visiting Faculty Program (sole author) Visitor: Dr. Richard Ignace, East Tennessee State University	\$1346
2007–08	Fund for Astrophysical Research Theodore Dunham, Jr. Grant (sole author) <i>Transportation for the HPOL Spectropolarimeter</i>	\$3000

2007–08	Mount Cuba Astronomical Foundation (sole author) <i>Awakenings: Reviving the HPOL Spectropolarimeter</i>	\$4000
2006–07	NASA Suzaku GO Program Co-I with Richard Ignace (ETSU); my portion (via Eureka Scientific) \$15,000 <i>An X-Ray Study of Hot Plasma in the Interacting Binary <math>\beta</math> Lyr</i>	\$24,992
2003–06	NSF Astronomy & Astrophysics Postdoctoral Fellowship (sole author) <i>Supernovae in 3-D: Bridging the Gap Between Observations and Theory</i>	\$194,000
2001	NASA-GSFC Graduate Student Researchers Program (sole author) <i>Three-Dimensional Multiwavelength Modeling Techniques for Analysis of Aspherical Stellar and Galactic Systems</i>	\$22,000
2000	STScI HST GO Program Co-I with Kenneth H. Nordsieck (UW-Madison) <i>Orientation and Extent of the Bipolar Outflow in <math>\alpha</math> Lyrae</i>	\$45,000
1999	Women in Science and Engineering Initiative Travel Grant (sole author)	\$250
1999	Wisconsin Space Grant Consortium Graduate Fellowship (sole author) <i>Curing Color-Blindness in Binary Star Numerical Models</i>	\$4000
1998	Wisconsin Space Grant Consortium Graduate Fellowship (sole author) <i>A Phased Spectropolarimetric Investigation of Herbig Ae/Be Binary Stars</i>	\$4000
1998	Sigma Xi Grants-in-Aid of Research Program (sole author) <i>Spectropolarimetric Observations and Models of Herbig Ae/Be Binary Stars</i>	\$2400

## Publications

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### Peer-reviewed

Underlining denotes current and past DU Ph.D. students.

- 2023 Nazé, Y., Rauw, G., Johnson, R.A., Gossett, E., & **Hoffman, J.L.**, "Colliding Winds in WR21 and WR31 – 1. The X-ray View," *MNRAS*, accepted (<https://arxiv.org/abs/2309.00404>)
- 2023 Broder, E.D., Fetrow, K.J., Murphy, S.M., **Hoffman, J.L.**, & Tinghitella, R.M., "STEM Summer Camp for Girls Positively Affects Self-Efficacy," *American Biology Teacher*, in press (Oct. 2023)
- 2022 Jones, C.E., Labadie-Bartz, J., Cotton, D.V., Nazé, Y., Peters, G.J., Hillier, D.J., Neiner, C., Richardson, N.D., **Hoffman, J.L.**, Carciofi, A.C., Wisniewski, J.P., Gayley, K.G., Suffak, M.W., Ignace, R., & Scowen, P.A., "Ultraviolet Spectropolarimetry: On the Origin of Rapidly Rotating B Stars," *ApJSS*, 367, 124
- 2022 Peters, G.J., Gayley, K., Ignace, R., Jones, C.E., Nazé, Y., St-Louis, N., Stevance, H., Vink, J.S., Richardson, N.D., **Hoffman, J.L.**, Lomax, J.R., Shenar, T., Fullard, A.G., & Scowen, P.A., "Ultraviolet Spectropolarimetry: Conservative and Nonconservative Mass transfer in OB Interacting Binaries," *Ap&SS*, 367, 119
- 2022 St-Louis, N., Gayley, K.G., Hillier, D.J., Ignace, R., Jones, C.E., David-Uraz, A., Richardson, N.D., Vink, J.S., Peters, G.J., **Hoffman, J.L.**, Nazé, Y., Stevance, H., Shenar, T., Fullard, A.G., Lomax, J.R., Scowen, P.A., "UV Spectropolarimetry with Polstar: Massive Star Binary Colliding Winds," *Ap&SS*, 367, 118

Underlining denotes current and past DU Ph.D. students.

- 2022 Ignace, R., Fullard, A.G., Shrestha, M., Nazé, Y., Gayley, K., **Hoffman, J.L.**, Lomax, J.R., & St-Louis, N., "Modeling the Optical to Ultraviolet Polarimetric Variability from Thomson Scattering in Colliding-Wind Binaries," *ApJ*, 933, 5
- 2022 Fullard, A.G., O'Brien, J.T., Kerzendorf, W.E., Shrestha, M., **Hoffman, J.L.**, Ignace, R., & van der Smagt, P., "New Mass Estimates for Massive Binary Systems: A Probabilistic Approach Using Polarimetric Radiative Transfer," *ApJ*, 930, 89
- 2021 Leonard, D.C., Dessart, L., Hillier, D.J., Pignata, G., Williams, G.G., **Hoffman, J.L.**, Milne, P., Smith, N., Smith, P.S., & Khandrika, H.G., "A High-Velocity Scatterer Revealed in the Thinning Ejecta of a Type II Supernova," *ApJL*, 921, 35
- 2021 Murphy, S.M., Vyas, D.K., **Hoffman, J.L.**, Jenck, C.S., Washburn, B.A., Hunnicutt, K.E., Davidson, A., Andersen, J.M., Bennet, R.K., \*Gifford, A., \*Herrera, M., \*Lawler, B., \*Lorman, S., \*Peacock, V., \*Walker, L., \*Watkins, E., \*Wilkinson, L., \*Williams, Z., & Tinghitella, R.M. 2021, "Streetlights Positively Affect the Presence of an Invasive Grass Species," *Ecology & Evolution*, 11, 10320  
**\* 9 co-authors were middle-school DU SciTech participants.**
- 2020 Shrestha, M., Neilson, H., **Hoffman, J.L.**, Ignace, R., & Fullard, A.G. "Polarization Simulations of Stellar Wind Bow Shock Nebulae. II. The Case of Dust Scattering," *MNRAS*, 500, 4319
- 2020 Bilinski, C., Smith, N., Williams, G.G., Smith, P., Andrew, J., Clubb, K., Filippenko, A.V., Zheng, W., Fox, O., Graham, M.L., Kelley, P., Mauerhan, J.C., Milne, P., Sand, D.J., **Hoffman, J.L.**, Leonard, D.C., & Dessart, L. "SN 2014ab: An Aspherical Type II<sub>n</sub> Supernova with Low Polarization," *MNRAS*, 498, 3835
- 2020 Gootkin, K., Dorn-Wallenstein, T., Lomax, J.R., Eadie, G., Levesque, E.M., Babler, B., **Hoffman, J.L.**, Meade, M.R., Nordsieck, K.H., & Wisniewski, J.P. "13 Years of P Cygni Spectropolarimetry: Investigating Mass-Loss through H $\alpha$ , Periodicity, and Ellipticity," *ApJ*, 900, 162
- 2020 Fullard, A.G., St-Louis, N., Moffat, A.F.J., Piirola, V.E., Manset, N., & **Hoffman, J.L.**, "A Multi-Wavelength Search for Intrinsic Linear Polarization in Wolf-Rayet Winds," *ApJ*, 159, 214
- 2018 Shrestha, M., Neilson, H., **Hoffman, J.L.**, & Ignace, R., "Polarization Simulations of Stellar Wind Bow Shocks. I. The Case of Electron Scattering," *MNRAS*, 477, 1365
- 2018 Bilinski, C., Smith, N., Williams, G.G., Smith, P., Zheng, W., Graham, M.L., Mauerhan, J.C., Andrews, J.E., Filippenko, A.V., Akerlof, C., Chatzopoulos, E., **Hoffman, J.L.**, Huk, L., Leonard, D.C., Marion, G.H., Milne, P., Quimby, R.M., Silverman, J.M., Vinkó, J., Wheeler, J.C., & Yuan, F. "SN 2012ab: A Peculiar Type II<sub>n</sub> Supernova with Aspherical Circumstellar Material," *MNRAS*, 475, 1104
- 2017 Lomax, J.R., Fullard, A.G., \*Malatesta, M.A., Babler, B., Bednarski, D., Berdis, J.R., Bjorkman, K.S., Bjorkman, J.E., Carciofi, A.C., Davidson, J.W., Keil, M., Meade, M.R., Nordsieck, K., Scheffler, M., **Hoffman, J.L.**, & Wisniewski, J.P. "The Complex Circumstellar and Circumbinary Environment of V356 Sgr," *MNRAS*, 464, 1936 **\* Third author was a DU undergraduate physics major.**
- 2016 Porter, A.L., Leising, M.D., Williams, G.G., Milne, P., Smith, P., Smith, N., Bilinski, C., **Hoffman, J.L.**, Huk, L., & Leonard, D.C., "Asymmetries in SN 2014J Near Maximum Light Revealed through Spectropolarimetry," *ApJ*, 828, 84

Underlining denotes current and past DU Ph.D. students.

- 2015 Mauerhan, J., Williams, G.G., Leonard, D.C., Smith, P.S., Smith, N., Filippenko, A.V., **Hoffman, J.L.**, Huk, L.N., Clubb, K.I., Silverman, J.M., Cenko, S.B., Milne, P., Gal-Yam, A., Ben-Ami, S., & Dessart, L., "Spectropolarimetry of SN 2011dh in M51: Geometric Insights on a Type IIb Supernova Progenitor and Explosion," *MNRAS*, 453, 4467
- 2015 Shenar, T., Oskinova, L., Hamann, W.-R., Corcoran, M.F., Moffat, A.F.J., Waldron, W.L., Huenemoerder, D.P., Maíz Apellániz, J., Nichols, J.S., Todt, H., Nazé, Y., **Hoffman, J.L.**, & Negueruela, I. "A Coordinated X-Ray and Optical Campaign on the Nearest Massive Eclipsing Binary,  $\delta$  Ori Aa: IV. A Multiwavelength, Non-LTE Spectroscopic Analysis," *ApJ*, 809, 135
- 2015 Pablo, H., Richardson, N.D., Moffat, A.F.J., Corcoran, M., Shenar, T., Benvenuto, O., Fuller, J., Nazé, Y., **Hoffman, J.L.**, Miroshnichenko, A., Maíz Apellániz, J., Evans, N., Eversberg, T., Gayley, T., Gull, T., Hamaguchi, K., Hamann, W.-R., Henrichs, H., Hole, K.T., Ignace, R., Iping, R., Lauer, J., Leutenegger, M., Lomax, J.R., and 23 others, "A Coordinated X-Ray and Optical Campaign on the Nearest Massive Eclipsing Binary,  $\delta$  Ori Aa: III. Analysis of Optical Photometric (MOST) and Spectroscopic (Ground Based) Variations," *ApJ*, 809, 134
- 2015 Nichols, J.S., Huenemoerder, D.P., Waldron, W.L., Nazé, Y., Pollock, A.M.T., Moffat, A.F.J., Lauer, J., Shenar, T., Russell, C.M.P., Richardson, N.D., Pablo, H., Evans, N.R., Hamaguchi, K., Gull, T.R., Hamann, W.-R., Oskinova, L., Ignace, R., **Hoffman, J.L.**, Hole, K.T., & Lomax, J.R., "A Coordinated X-Ray and Optical Campaign on the Nearest Massive Eclipsing Binary,  $\delta$  Ori Aa: II. X-Ray Variability," *ApJ*, 809, 133
- 2015 Corcoran, M.F., Pablo, H., Shenar, T., Pollock, A.M.T., Waldron, W.L., Moffat, A.F.J., Richardson, N.D., Russell, C.M.P., Hamaguchi, K., Huenemoerder, D.P., Oskinova, L., Hamann, W.-R., Nazé, Y., Ignace, R., Evans, N.R., Lomax, J.R., **Hoffman, J.L.**, and 7 others, "A Coordinated X-Ray and Optical Campaign on the Nearest Massive Eclipsing Binary,  $\delta$  Ori Aa: I. Overview of the X-Ray Spectrum," *ApJ*, 809, 132
- 2015 Lomax, J.R., Nazé, Y., **Hoffman, J.L.**, Russell, C.M.P., de Becker, M., Corcoran, M.F., Davidson, J.W., Neilson, H.R., Owocki, S., Pittard, J.M., & Pollock, A.M.T., "V444 Cyg X-ray and Polarimetric Variability: Radiative and Coriolis Forces Shape the Wind Collision Region," *A&A*, 573, A43
- 2014 Davidson, J.W., Bjorkman, K.S., **Hoffman, J.L.**, Bjorkman, J.E., Nordsieck, K.H., Babler, B.L., Meade, M.R., Wisniewski, J.P., & Lomax, J.R., "The HPOL Spectropolarimeter at Ritter Observatory," *Journal of Astronomical Instrumentation*, 03, 1450009
- 2012 Mauerhan, J., Williams, G.G., Smith, N., Smith, P.S., Filippenko, A.V., **Hoffman, J.L.**, Milne, P., Leonard, D.C., Clubb, K.I., Fox, O., & Kelly, P.L., "Multi-Epoch Spectropolarimetry of SN 2009ip: Direct Evidence for Aspherical Circumstellar Material," *MNRAS*, 442, 1166
- 2012 Lomax, J. R., **Hoffman, J.L.**, Elias, N.M., Bastien, F., & Holenstein, B.D., "Geometrical Constraints on the Hot Spot in  $\beta$  Lyrae," *ApJ*, 750, 59
- 2011 **Hoffman, J.L.**, "Massive Stars in Polarized Light," *Bulletin de la Société Royale des Sciences de Liège*, 80, 81
- 2011 Lomax, J.R. & **Hoffman, J.L.**, "Spectropolarimetry of beta Lyrae: Constraining the Location of the Hot Spot and Jets," *Bulletin de la Société Royale des Sciences de Liège*, 80, 689

- 2008 **Hoffman, J.L.**, Leonard, D.C., Chornock, R., Filippenko, A.V., Barth, A.J., & Matheson, T., "The Dual-Axis Circumstellar Environment of the Type II<sub>n</sub> Supernova SN 1997eg," *ApJ*, 688, 1186
- 2007 Ignace, R., Oskinova, L.M., Waldron, W.L., **Hoffman, J.L.**, & Hamann, W.-R., "Phase-dependent X-Ray Observations of the beta Lyrae System: No Eclipse in the Soft Band," *A&A*, 477, L37
- 2006 Winn, J.N., Hamilton, C.M., Herbst, W.J., **Hoffman, J.L.**, Holman, M.J., Johnson, J.A., & Kuchner, M.J., "The Orbit and Occultations of KH 15D," *ApJ*, 644, 510
- 2006 Leonard, D.C., Filippenko, A.V., Ganeshalingam, M., Serduke, F.J.D., Li, W., Swift, B.J., Gal-Yam, A., Foley, R.J., Fox, D.B., Park, S., **Hoffman, J.L.**, & Wong, D.S., "A Non-Spherical Core in the Explosion of SN 2004dj," *Nature*, 440, 505
- 2005 **Hoffman, J.L.**, Chornock, R., Leonard, D.C., & Filippenko, A.V., "Interstellar Polarization and the Position Angle Orientations of Seyfert 1 Galaxies," *MNRAS*, 363, 1241
- 2003 **Hoffman, J.L.**, Whitney, B.A., & Nordsieck, K.H., "The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally-Illuminated Disks," *ApJ*, 598, 572
- 2003 Wisniewski, J.P., Morrison, N.D., Bjorkman, K.S., Miroschnichenko, A., Gault, A.C., **Hoffman, J.L.**, Meade, M.R., & Nett, J.M., "Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis," *ApJ*, 588, 486
- 2002 \*Meyer, J. M., Nordsieck, K.H., & **Hoffman, J.L.**, "Spectropolarimetric Clues to the Structure and Evolutionary Status of MWC 349A," *AJ*, 123, 1639  
\* **First author was an undergraduate I advised while a Ph.D. student at UW-Madison.**
- 1998 **Hoffman, J.L.**, Nordsieck, K.H., & Fox, G.K., "Spectropolarimetric Evidence for a Bipolar Flow in beta Lyrae," *AJ*, 115, 1576 (1988)

### Edited volume

- 2012 *Stellar Polarimetry: From Birth to Death*  
Proceedings of the conference of the same name held in Madison, WI, June 2011  
Editors: **J.L. Hoffman**, J.E. Bjorkman, & B.A. Whitney  
AIP Conference Proceedings, vol. 1429 (New York: AIP; ISBN 978-0-7354-1012-1)

### Other publications, white papers, and conference proceedings

Underlining denotes current and past DU Ph.D. students; \*\* denotes current and past DU undergraduates.

- 2021 Peters, G.J., Gayley, K., Ignace, R., Jones, C.E., Nazé, Y., St-Louis, N., Stevance, H., Vink, J.S., Richardson, N.D., **Hoffman, J.L.**, Lomax, J.R., Shenar, T., Fullard, A.G., & Scowen, P.A., "Ultraviolet Spectropolarimetry with Polstar: Conservative and Nonconservative Mass transfer in OB Interacting Binaries," white paper, [arXiv:2111.14047](https://arxiv.org/abs/2111.14047)
- 2021 St-Louis, N., Gayley, K.G., Hillier, D.J., Ignace, R., Jones, C.E., David-Uraz, A., Richardson, N.D., Vink, J.S., Peters, G.J., **Hoffman, J.L.**, Nazé, Y., Stevance, H., Shenar, T., Fullard, A.G., Lomax, J.R., & Scowen, P.A., "Ultraviolet Spectropolarimetry with Polstar: Massive Star Binary Colliding Winds," white paper, [arXiv:2111.11552](https://arxiv.org/abs/2111.11552)



Underlining denotes current and past DU Ph.D. students; \*\* denotes current and past DU undergraduates.

- 2021 Jones, C.E., Labadie-Bartz, J., Nazé, Y., Peters, G.J., Cotton, D.V., Hillier, D.J., Neiner, C., Richardson, N.D., **Hoffman, J.L.**, Carciofi, A.C., Wisniewski, J.P., Gayley, K.G., & Scowen, P.A., "Ultraviolet spectropolarimetry with Polstar: On the Origin of Rapidly Rotating B Stars," white paper, [arXiv:2111.07926](https://arxiv.org/abs/2111.07926)
- 2020 \*\*Yoos, S., **Hoffman, J.L.**, & Fullard, A.G., "Perfect Circles: A Study of the Scattering Regions of Wolf-Rayet Binary Stars," *DU Undergraduate Research Journal*, 2, 71 ([tinyurl.com/yoos2020](https://tinyurl.com/yoos2020))
- 2019 Johnson, R.A., Fullard, A.G., Lomax, J.R., \*\*Cooper, K., \*\*Leon-Alvarez, D., **Hoffman, J.L.**, & Nordsieck, K.H., "A Comparison of the Well-constrained Geometry of V444 Cygni and Two Possible Analogs: WR 21 and WR 62a," *RNAAS*, 3, 146
- 2019 \*\*Lin, A.A., Shrestha, M., Wolfe, T.M., **Hoffman, J.L.**, & Stencel, R.E., "Polarization Observations and Models Constrain the Properties of the Bow Shock around HD 230561," *RNAAS*, 3, 121
- 2019 Scowen, P., Ignace, R., Neiner, C., Wade, G., and 25 others including **Hoffman, J.L.**, "PolStar – An Explorer-Class FUV Spectropolarimetry Mission to Map the Environments of Massive Stars," white paper submitted to the Decadal Survey on Astronomy & Astrophysics: Activities, Projects, or State of the Profession Consideration ([tinyurl.com/polstar-wp](https://tinyurl.com/polstar-wp))
- 2018 Fullard, A.G., **Hoffman, J.L.**, \*\*DeKlotz, S., \*\*Azancot Luchtan, D., \*\*Cooper, K., & Nordsieck, K.H., "Spectropolarimetry of the WR + O Binary WR42," *RNAAS*, 2, 37
- 2017 **Hoffman, J.L.**, Williams, G.G., Leonard, D.C., Bilinski, C., Dessart, L., Huk, L.N., Mauerhan, J.C., Milne, P., Porter, A.L., Smith, N., & Smith, P.S., "Reconstructing the Scene: New Views of Supernovae and Progenitors from the SNSPOL Project," in *IAUS 329: The Lives and Death-Throes of Massive Stars*, eds. J.J. Eldridge, J.C. Bray, L.A.S. McClelland, & L. Xiao, 54 ([goo.gl/d2N33z](https://goo.gl/d2N33z))
- 2016 Foley, R., Fong, W., **Hoffman, J.L.**, Matheson, T., Sand, D.J., & Street, R., "Characterizing the Transient Sky," in *Maximizing Science in the Era of LSST: A Community-Based Study of Needed US Capabilities*, 29 ([arxiv.org/abs/1610.01661](https://arxiv.org/abs/1610.01661); [noao.edu/meetings/lsst-oir-study/](https://noao.edu/meetings/lsst-oir-study/))
- 2015 **Hoffman, J.L.** & Lomax, J.R., "Structure and Fate of Binary WR Stars: Clues from Spectropolarimetry," in *Wolf-Rayet Stars: Proceedings of an International Workshop Held in Potsdam, Germany, 1.–5. June 2015*, eds. W.-R. Hamann, A. Sander, and H. Todt (Universitätsverlag Potsdam), 85 ([tinyurl.com/hoffmanlomax15](https://tinyurl.com/hoffmanlomax15))
- 2015 Leonard, D.C., Dessart, L., Pignata, G., Hillier, D.J., Williams, G.G., Smith, Paul S., Khandrika, H., Bilinski, C., Duong, N., Flatland, K., Gonzalez, L., **Hoffman, J.L.**, Horst, C., Huk, L., et al., "On the Explosion Geometry of Red Supergiant Stars," in *Proceedings of the IAU General Assembly: Astronomy in Focus Volume 1*, eds. P. Benvenuti et al., 2255774
- 2015 **Hoffman, J.L.**, "Mass Flows in Massive Binaries: Clues from Spectropolarimetry," in EAS Publications Series 71, *Physics of Evolved Stars: A Conference Dedicated to the Memory of Olivier Chesneau*, eds. E. Lagadec, F. Millour and T. Lanz (EDP Sciences), 163
- 2015 Shrestha, M., & **Hoffman, J.L. [PI]**, "Polarization Signatures of Bow Shocks in Stellar Winds," in EAS Publications Series 71, *Physics of Evolved Stars: A Conference Dedicated to the Memory of Olivier Chesneau*, eds. E. Lagadec, F. Millour and T. Lanz (EDP Sciences), 293

Underlining denotes current and past DU Ph.D. students.

- 2015 **Hoffman, J.L.**, "Polarimetry as a Window into Supernova Explosions and Progenitors," in Proc. IAUS 305, *Polarimetry: From the Sun to Stars and Stellar Environments*, eds. K.N. Nagendra, S. Bagnulo, R. Centeno, & M. Martínez González, 269
- 2014 Andersson, B.G., and 13 others including **Hoffman, J.L.**, "The Need for General-Use Polarimeters in the Era of LSST," white paper submitted to the Committee on a Strategy to Optimize the U.S. OIR System in the Era of the LSST (National Academy of Science)
- 2014 Liu, C.T., Willman, B., Pepper, J., Rutkowski, M., Norman, D., Cruz, K., Bochanski, J., Lee, H., Isler, J., Gizis, J., Smith, J.A., Moustakas, J., Wehner, E., Alfred, M., McGruder, C., **Hoffman, J.L.**, et al., "Maximizing LSST's Scientific Return: Ensuring Participation from Smaller Institutions," white paper submitted to the Committee on a Strategy to Optimize the U.S. OIR System in the Era of the LSST (National Academy of Science; [arxiv.org/abs/1410.2526](https://arxiv.org/abs/1410.2526))
- 2013 Nazé, Y., Lomax, J., & **Hoffman, J.L.**, "An Unexpected Result for the V444 Cyg Binary," in EAS Publications Series vol. 64, *Setting a New Standard in the Analysis of Binary Stars*, eds. K. Pavlovski, A. Tkachenko, & G. Torres (Cambridge University Press), p. 415
- 2012 **Hoffman, J.L.**, Brown, J.C., Nordsieck, K., St.-Louis, N., & Wade, G., "Stellar Polarimetry: Where Are We and Where Are We Going?" in AIP Conference Series vol. 1429, *Stellar Polarimetry: From Birth to Death*, eds. J.L. Hoffman, J.E. Bjorkman, & B.A. Whitney (New York: AIP), p. 289
- 2012 **Hoffman, J. L.**, "Polarized Lines in Supernovae: Observations and Modeling," in ASP Conference Series vol. 449, *Astronomical Polarimetry 2008: Science from Small to Large Telescopes*, eds. P. Bastien, N. Manset, D.P. Clemens, & N. St-Louis (Orem, UT: ASP), p. 416
- 2010 **Hoffman, J.L.**, Modjaz, M., West, A. A., & Graham, J.R., "Transitional States: Addressing the Gender Imbalance among Postdoctoral Researchers at UC Berkeley," in *Women in Astronomy and Space Science: Meeting the Challenges of an Increasingly Diverse Workforce*, eds. A.L. Kinney, D. Khachadourian, P. S. Millar, & C. N. Hartman, p. 213
- 2009 **Hoffman, J.L.**, Hines, D., and 17 others, "O/IR Polarimetry for the 2010 Decade (SSE): Science at the Edge, Sharp Tools for All," white paper submitted to Stars and Stellar Evolution Science Frontiers panel, Astro2010 Decadal Survey Committee ([arxiv.org/abs/0902.4222](https://arxiv.org/abs/0902.4222))
- 2009 **Hoffman, J.L.**, "Women and Minorities in STEM: Upping the Numbers," book review, *STATUS*, January 2009, p. 14 ([tinyurl.com/status2009](http://tinyurl.com/status2009))
- 2008 Magalhães, A.M., and 28 others including **Hoffman, J.L.**, "Optical Polarimetry with the LSST," white paper submitted to the LSST Science Council ([tinyurl.com/lstt-pol](http://tinyurl.com/lstt-pol))
- 2007 **Hoffman, J.L.**, "Supernova Polarization and the Type II<sub>n</sub> Classification," in AIP Conference Series vol. 937, *Supernova 1987A: 20 Years After; Supernovae and Gamma-Ray Bursters*, eds. S. Immler, K.W. Weiler, & R. McCray (New York: AIP), p. 365
- 2007 **Hoffman, J.L.**, "Polarized Line Profiles as Diagnostics of Circumstellar Geometry in Type II<sub>n</sub> Supernovae," in *Revista Mexicana de Astronomía y Astrofísica Conference Series vol. 30, Circumstellar Media and Late Stages of Massive Stellar Evolution*, eds. G. García-Segura & E. Ramirez-Ruiz (Ensenada: UNAM), p. 57

- 2005 **Hoffman, J.L.**, Nugent, P., Kasen, D., Thomas, R.C., Filippenko, A.V., & Leonard, D.C., "Supernovae in 3-D: Bridging the Gap Between Observations and Theory," in ASP Conference Series vol. 343, *Astronomical Polarimetry: Current Status and Future Directions*, eds. A. Adamson, C. Aspin, C.J. Davis, & T. Fujiyoshi (San Francisco: ASP), p. 277
- 2004 **Hoffman, J.L.** & Urry, C.M., "Portrait of a Decade: Results from the 2003 CSWA Survey of Women in Astronomy," *STATUS*, June 2004 issue, p. 1 ([tinyurl.com/status04](http://tinyurl.com/status04))
- 2000 **Hoffman, J.L.**, Whitney, B.A., & Nordsieck, K.H., "Reflections on Scattered Light: Monte Carlo Simulations of the Flux and Polarization Curves of beta Lyrae," in ASP Conference Series, vol. 214, *IAU Colloq. 175: The Be Phenomenon in Early-Type Stars*, eds. M.A. Smith, H.F. Heinrichs, & J.A. Fabregat (San Francisco: ASP), p. 464

## Scholarly Presentations

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### Recent invited talks

#### "Metamorphosis: New Views of Supernovae and Progenitors"

- 2023: San Diego State University, San Diego, CA
- 2023: Embry-Riddle Aeronautical University, Prescott, AZ
- 2022: University of Wyoming, Laramie, WY
- 2022: University of Oklahoma, Norman, OK
- 2021: University of Auckland, Auckland, New Zealand
- 2019: Université de Montréal, Montréal, Canada
- 2019: Colorado State University, Fort Collins, CO
- 2019: University of Wisconsin-Madison Science Lunch, Madison, WI
- 2019: University of Denver, Denver, CO
- 2018: University of Colorado-Colorado Springs, Colorado Springs, CO

#### "Dancing and Exploding Stars"

- 2023: Grand Canyon Conversations, Grand Canyon, AZ, <https://vimeo.com/813340398>

#### "Lines and Loops in the SNSPOL Database"

- 2023: University of Arizona "Big Boom" talk series, Tucson, AZ

#### "Perfect Timing: How the New 'Time Domain' of Astronomy Reveals a Universe in Motion"

- 2022: Denver Astronomical Society Holiday Banquet, Denver, CO

#### "Emission Lines in Scattered Light Map Mass Flows in Wolf-Rayet Binaries"

- 2021: virtual AAS Meeting #237, Massive Stars in Colliding-Wind Binaries special session

#### "Metamorphosis: Seeing Supernovae in a New Light"

- 2021: Little Thompson Observatory, Berthoud, CO, virtual public star night

#### "Shadows in Space: What We Learn from Eclipses, Occultations, and Transits"

- 2017: Denver Astronomical Society General Meeting, Denver, CO

#### "You Can Be a Femme in STEM!"

- 2016: Keynote presentation, DU student-organized *Femme in STEM* outreach event, Denver, CO

#### "Evolution of Asymmetries in SN 2010jl"

- 2015: University of Arizona "Big Boom" talk series, Tucson, AZ

“Real-Life Death Stars: Why Supernova Explosions Are Even Weirder Than You Think”

2015: Astronomy on Tap Colorado, Denver, CO

2014: University of Wisconsin-Madison Space Place, Madison, WI

2014: Chamberlin Observatory 120<sup>th</sup> Anniversary Celebration, Denver, CO

2013: Sherlin Lecture, Community College of Aurora, Aurora, CO

“Polarimetry as a Window into Supernova Explosions and Progenitors”

2014: IAU Symposium 305, *Polarimetry: From the Sun to Stars and Stellar Environments*, Punta Leona, Costa Rica

2014: University of Wisconsin-Madison

“New Views of Stellar Explosions: The Supernova Spectropolarimetry Project”

2014: TMT Science Forum 2014, Tucson, AZ

2013: APS Four Corners Section Meeting, Denver, CO

“Women in Physics: Progress and Pitfalls”

2014: Colorado School of Mines, Golden, CO

“New Views of Stellar Explosions: The Supernova Spectropolarimetry Project”

2013: APS Four Corners Section Meeting, Denver, CO

“Stellar Archeology: Probing Stellar Mass Loss with Interacting Supernovae”

2013: University of Oklahoma, Norman, OK

2012: National Optical Astronomy Observatory, Tucson, AZ

2010: SOFIA Science Center, NASA Ames, Mountain View, CA

## Recent contributed talks and poster presentations

Underlining denotes current and past DU Ph.D. students; \*\* denotes current and past DU undergraduates.

- 2023 **Hoffman, J.L.**, Pickens, C.E., \*\*Panzera, T.V., Johnson, R.A., Fullard, A.G., Lomax, J.R., & Nordsieck, K.H., “When is a binary not a binary? Line polarization sheds light on rotation vs. binarity in Wolf-Rayet variables,” iPoster presented at AAS Meeting #241, 302.38, Seattle, WA
- 2023 DeSoto, S., Pickens, C.E., Shrestha, M., **Hoffman, J.L.**, Leonard, D.C., Williams, G.G., & the SNSPOL Project, “Asymmetry and Clumps and Jets! Oh My!: Revealing the Changing Structure of Type-Ib SN 2012au,” iPoster presented at AAS Meeting #241, 107.15, Seattle, WA
- 2023 Johnson, R.A., Lomax, J.R., Fullard, A.G., Nazé, Y., Nordsieck, K.H., & **Hoffman, J.L.**, “Massive binary wind interactions in wavelength and time,” iPoster presented at AAS Meeting #241, 302.37, Seattle, WA
- 2022 **Hoffman, J.L.**, Bilinski, C., Williams, G.G., Smith, N., Leonard, D.C., Mauerhan, J., Filippenko, A.V., & the SNSPOL Project, “Polarized Balmer line profiles reveal details of the pre-SN mass loss of the Type IIIn SN 2010jl,” poster presented at virtual meeting *SuperVirtual 2022*
- 2022 Pickens, C.E., DeSoto, S., Shrestha, M., Bilinski, C., **Hoffman, J.L.**, Leonard, D.C., Williams, G.G., & the SNSPOL Project, “Spectropolarimetric “Snapshots” of the Spectral Transition in SNe IIb,” poster presented at virtual meeting *SuperVirtual 2022*
- 2022 DeSoto, S., Pickens, C.E., Shrestha, M., **Hoffman, J.L.**, Leonard, D.C., Williams, G.G., & the SNSPOL Project, “Revealing Clumps and Jets in the Structure of Energetic Type Ib SN 2012au,” poster presented at virtual meeting *SuperVirtual 2022*

Underlining denotes current and past DU Ph.D. students; \*\* denotes current and past DU undergraduates.

- 2021 **Hoffman, J.L.**, Huk, L.N., \*\*Churchill, J., Williams, G.G., & the SNSPOL Project, "Polarized Lines Illuminate the Progenitors of Core-Collapse Supernovae," talk presented at hybrid meeting *Astronomical Polarimetry 2020*, Hiroshima, Japan
- 2021 **Hoffman, J.L.**, Diaz, R., DePoy, D.L., Cárdenes, R., Cook, E., Lomax, J.R., Monin, D., Pazder, J., Wade, G.A., White, J., & Wisniewski, J.P., "Awakenings: Renovation and Commissioning of GPOL," poster presented at hybrid meeting *Astronomical Polarimetry 2020*, Hiroshima, Japan
- 2021 DeSoto, S., \*\*Churchill, J., Pickens, C., **Hoffman, J.L.**, Leonard, D.C., Williams, G.G., & the SNSPOL Project, "Comparing Spectropolarimetric Signatures of Type Ib and Ic Supernovae," poster presented at virtual AAS Meeting #237, 309.04
- 2021 Johnson, R.A., \*\*Panzera, T., Nordsieck, K.H., & **Hoffman, J.L.**, "To Binary or Not to Binary: An Analysis of WR 71's Polarized Line Profiles," iPoster presented at virtual AAS Meeting #237, 136.07
- 2021 Pickens, C., DeSoto, S., **Hoffman, J.L.**, Leonard, D.C., Williams, G.G., & the SNSPOL Project, "Spectropolarimetric Snapshots of Stripped-Envelope Supernovae," iPoster presented at virtual AAS Meeting #237, 551.02
- 2020 **Hoffman, J.L.**, Huk, L.N., \*\*Churchill, J., Williams, G.G., & the SNSPOL Project, "Scattered Light Simulations Illuminate the Progenitors of Core-Collapse Supernovae," iPosterPlus (poster with talk) presented at virtual AAS Meeting #236, 227.01
- 2020 Johnson, R., **Hoffman, J.L.**, Nordsieck, K.H., Lomax, J.R., \*\*Cooper, K., \*\*Yoos, S., \*\*Leon-Alvarez, D., & Fullard, A.G., "Finding Common Ground: Comparative Spectropolarimetry of WN+O Binaries," iPoster presented at virtual AAS Meeting #236, 236.22701
- 2019 Johnson, R.A., **Hoffman, J.L.**, Fullard, A.G., & \*\*Yoos, S., "Shedding (Polarized) Light on Long Duration Gamma-Ray Bursts," poster at *Sagan Exoplanet Summer Workshop*, Pasadena, CA
- 2019 **Hoffman, J.L.**, "Leaving Traces: How Polarized Lines Reveal Properties of CCSN Progenitors," talk presented at STScI Spring Symposium, *The Deaths & Afterlives of Stars*, Baltimore, MD
- 2019 Fullard, A., **Hoffman, J.L.**, Nordsieck, K.H., & Moffat, A.F.J., "Spectropolarimetric Analysis of WR + O Binaries with SALT," poster presented at STScI Spring Symposium, *The Deaths & Afterlives of Stars*, Baltimore, MD
- 2019 **Hoffman, J.L.**, Fullard, A., & Johnson, R.A., "Knowing the Dancer From the Dance: Line Polarization Simulations of Colliding-Wind Binaries," poster presented at AAS Meeting #233, 233.34807, Seattle, WA
- 2019 Fullard, A., **Hoffman, J.L.**, & Nordsieck, K.H., "Spectropolarimetry of WR 113 and Other WR + O Binaries with SALT," poster\* presented at AAS Meeting #233, 233.44806, Seattle, WA  
**\*Chambliss Astronomy Achievement Award honorable mention**
- 2018 **Hoffman, J.L.**, Huk, L.N., \*\*Churchill, J., \*\*Cooper, K., Williams, G.G., & the SNSPOL Project, "Polarized Lines and the Progenitors of Core-Collapse Supernovae," poster presented at *Massive Stars and Supernovae*, Bariloche, Argentina
- 2018 Fullard, A.G., **Hoffman, J.L.**, Nordsieck, K.H., Moffat, A.F.J., & St-Louis, N., "Spectropolarimetry of WR + O Binaries with SALT," talk at *Massive Stars and Supernovae*, Bariloche, Argentina

Underlining denotes current and past DU Ph.D. students; \*\* denotes current and past DU undergraduates.

- 2018 Shrestha, M., **Hoffman, J.L.**, Ignace, R., & Neilson, H.R., "The Polarization of Bow Shock Nebulae Around Massive Stars," poster presented at AAS Meeting #232: 232.11702, Denver, CO
- 2018 Fullard, A., \*\*Ansary, Z., \*\*Azancot Luchtan, D., \*\*Gallegos, H., \*\*Luepker, M., **Hoffman, J.L.**, Nordsieck, K.H., & SALT Observation Team, "Astronomy in Denver: Spectropolarimetric Observations of 5 Wolf-Rayet Binaries with SALT/RSS," talk presented at AAS Meeting #232: 232.31503, Denver, CO
- 2018 **Hoffman, J.L.**, \*\*Fetrow, K., Broder, E.D., Murphy, S.M., Tinghitella, R.M., & Hart, Q., "Astronomy in Denver: Effects of a Summer Camp on Girls' Preconceived Notions of Careers in STEM," poster presented at AAS Meeting #232: 232.11704, Denver, CO

## Telescope and Supercomputer Time Awarded

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Underlining denotes current and past DU Ph.D. students.

- 2020–24 NSF Extreme Science and Engineering Discovery Environment (XSEDE)  
*SLIP: Connecting Supernovae with their Binary Progenitors*, 1462 node-hours
- 2018–24 SALT/RSS Medium-to-Long-Term Program (co-I with PI Kenneth Nordsieck)  
*Asymmetry is Destiny: Wolf-Rayet Binary Stars as GRB Progenitors*, 102 hours in 10 semesters
- 2020 Chandra X-Ray Observatory Cycle 22 (co-I with PI Rachel Johnson and co-I Jamie Lomax)  
*Double Vision: New Views of Colliding-Wind Binary Systems*, 40 ksec
- 2019–20 NSF XSEDE  
*SLIP: Connecting Supernovae with their Binary Progenitors*, 2300 node-hours
- 2018 SALT/RSS semester 2018-1 (co-I with PI Kenneth Nordsieck)  
*Asymmetry is Destiny: Wolf-Rayet Binary Stars as GRB Progenitors*, 50 hours
- 2017 NSF XSEDE extension  
*SLIP: Probing Supernova Environments through Line Polarization*, 33,180 node-hours
- 2017–18 SALT/RSS semester 2017-2 (co-I with PI Kenneth Nordsieck)  
*Asymmetry is Destiny: Wolf-Rayet Binary Stars as GRB Progenitors*, 51 hours
- 2017 SALT/RSS semester 2017-1 (co-I with PI Kenneth Nordsieck)  
*Asymmetry is Destiny: Wolf-Rayet Binary Stars as GRB Progenitors*, 15 hours
- 2016 NSF XSEDE  
*SLIP: Probing Supernova Environments through Line Polarization*, 3,000,000 service units (SUs)
- 2014 NSF XSEDE  
*SLIP: Probing Supernova Environments through Line Polarization*, 683,258 hours
- 2012 NSF XSEDE  
*SLIP: Construction of a Model Grid for Probing Supernova Environments*, 200,000 hours
- 2011 NASA Swift Cycle 8 (co-I with PI Michael Corcoran and co-I Jamie Lomax)  
*Continued X-Ray Monitoring of Two Key Massive, Colliding Wind Binaries: WR140 and eta Car*, 5 ksec (1.4 hours) per month in 2012–13

Underlining denotes current and past DU Ph.D. students.

- 2011 NRAO Very Large Array Semester 2012A (co-I with PI Nicolas Elias)  
*AX Monocerotis: Caught Between a Star and a Dark Place*, 4 hrs priority A, 5 hrs priority C
- 2011 NASA XMM/Newton AO-11 (co-I with PI Jamie Lomax)  
*The Wind-Wind Interaction Region and Stellar Wind Geometry of V444 Cyg*, 100 ksec

## Student Research Advising and Mentorship

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### Graduate students, dissertation adviser

- 2022– Emma Lieb, current Ph.D. student
- 2020– Christopher Pickens, current Ph.D. student
- 2020– Sabrina DeSoto, current Ph.D. student
- 2018– Rachel A. Johnson, current MS student
- 2014–20 Andrew G. Fullard, Ph.D., current research consultant, Michigan State U. Institute for Cyber-Enabled Research  
*A Spectropolarimetric Study of Wolf-Rayet Binary Stars*
- 2012–18 Manisha Shrestha, Ph.D., current postdoctoral researcher, U. Arizona Steward Observatory  
*Polarized Bow Shock Nebulae Reveal Features of the Winds and Environments of Massive Stars*
- 2009–17 Leah N. Huk, Ph.D., current HPC engineer, Oak Ridge National Laboratory  
*Time-Dependent Spectropolarimetric Modeling of Interacting Core-Collapse Supernovae*
- 2007–13 Jamie R. Lomax, Ph.D., current associate professor, U.S. Naval Academy  
*The X-ray and Spectropolarimetric View of Mass Loss and Transfer in Massive Binary Stars*

### Undergraduate students, BS thesis adviser

- 2022 Toni V. Panzera, current Ph.D. student, astronomy, Rice University  
*A Spectropolarimetric Study of the Southern Wolf-Rayet Stars WR 12 and WR 71*
- 2022 Mary Ringgenberg, current software engineer, Numerica Corporation  
*Revealing the Structure of Wolf-Rayet Binary Systems WR47 and WR62a*
- 2018 Austin A. Lin, MS mechanical engineering, U. Iowa, current NDE engineer, Pratt & Whitney  
*Polarization Observations of the Unresolved Bow Shock of HD 230561*
- 2012 Michael A. Malatesta, MS astrophysics, U. Oklahoma, current data science engineer, Flywheel Technologies  
*Circumstellar Material in the Massive Eclipsing Binary Star V356 Sgr*
- 2011 Charee Peters, MA physics, Fisk U., Ph.D. astronomy, U. Wisconsin-Madison, current chief data officer, Wisconsin Legislative Audit Bureau  
*Celestial Explosions: Evidence for a Circumstellar Disk around the Type II In SN 1997eg*
- 2008 Kathleen Geise, MS and Ph.D. physics, U. Denver  
*Stellar Atmospheres: A Computational Approach*

## Undergraduate students, research adviser (including BS thesis students)

\* Grant(s) awarded; ^ authored/co-authored publication; # regional/national conference poster presentation; † internal poster presentation completed or planned; @ senior thesis completed

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|-----------------------------|-----------------------------|---------------------------|
| 1. Sam Allen*               | 13. Hunter Gallegos         | 25. Jose Ornelas**        |
| 2. Zyed Ansary              | 14. Kathleen Geise@         | 26. Toni Panzera*@†       |
| 3. Sierra Ashley*†          | 15. Alisha Humphriest†      | 27. Naomi Pequette#†      |
| 4. Daniel Azancot Luchtan*^ | 16. Jaclyn Jensen*          | 28. Charee Peters*#†@     |
| 5. Evan Brownlee*           | 17. Anterra Kennedy         | 29. Joseph Rauch          |
| 6. Colton Casados-Medve*†   | 18. Shem Kikamaze*          | 30. Mary Ringgenberg*@†   |
| 7. June Churchill*#†        | 19. Daniela Leon-Alvarez*^† | 31. Hannah Slay**         |
| 8. Kevin Cooper^            | 20. Austin Lin*^#†@         | 32. Jessica Starr         |
| 9. Andrew Cromer*           | 21. Martin Luepker          | 33. Adriana Vega Covelo** |
| 10. Sophia DeKlotz*^†       | 22. Michael Malatesta*^#†@  | 34. Sarah Wilson          |
| 11. Gina Eldridge           | 23. Ryan Ninesling          | 35. David Winter**        |
| 12. Stasia Erickson         | 24. Thienbao Nguyen         | 36. Stella Yoos*^†        |

## Teaching and Outreach Experience

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### Teaching and training at DU

- 2008– Graduate instructor, University of Denver (3 quarters/year)  
PHYS 3251, Astrophysics: Radiative Processes (undergraduate/graduate; W'14, W'16, W'19, W'20, W'24 planned)  
PHYS 4001, Introduction to Research I (F'15)  
PHYS 4002, Introduction to Research II (W'12, W'19)  
PHYS 4611, Advanced Electricity & Magnetism I (W'08, W'09, W'10, W'12)  
PHYS 4612, Advanced Electricity & Magnetism II (S'08, S'09, S'10, S'12, S'14)
- 2008– Undergraduate instructor, University of Denver (3 quarters/year)  
FSEM 1111, First-Year Seminar (F'08, F'09, F'12, F'13)  
PHYS 1200, Physics Preparatory (F'16, F'17, F'18, F'20, F'21, F'22, F'23 planned)  
PHYS 1212, University Physics II (S'15, S'17, S'18, S'19, S'20, S'21, S'22)  
PHYS 1213/1214, University Physics III (F'10, F'11, F'16, F'19)  
PHYS 2050, Ways of Seeing and Sensing (interdisciplinary, Sum '24 planned)  
PHYS 2061, Telescopes & Instrumentation (W'21, W'22)  
PHYS 3100, Senior Seminar (F'17, F'18, F'20, F'21, F'22, F'23 planned)  
PHYS 3251, Astrophysics: Radiative Processes (undergraduate/graduate; W'14, W'16, W'19, W'20, W'24 planned)  
PHYS 3611, Electromagnetism I (W'11, W'13)  
PHYS 3612, Electromagnetism II (S'11, S'13, S'15)  
PHYS 3991, Practical Physics Pedagogy (S'15, F'16, S'17, S'18, S'19, F'19, S'20)
- 2015–22 Organizer and mentor, Practical Physics Pedagogy project  
Trained and supervised undergraduate learning assistants for University Physics II and III.



## Sample outreach and media appearances

- 2023 Featured in *Star Stuff* podcast, Lowell Observatory, [lowell.edu/making-science-accessible](http://lowell.edu/making-science-accessible), July 2023
- 2023 Featured in *Looking Up* podcast, Cincinnati Public Radio, [tinyurl.com/hoffman-lookup](http://tinyurl.com/hoffman-lookup), June 2023
- 2023 Profiled in *Williams-Grand Canyon News*, [tinyurl.com/wgcnews](http://tinyurl.com/wgcnews), Mar. 2023
- 2022 Profiled in *DU Undergraduate Research Journal*, [tinyurl.com/hoffman-duurj](http://tinyurl.com/hoffman-duurj), Jan. 2022
- 2015– Co-organizer, DU SciTech and guest presenter, RU SciTech  
With DU colleagues, organize and carry out a weeklong summer STEM camp aimed at middle-school girls from underrepresented groups. Led workshops on telescope construction and use at the Regis University version of the same program.
- 2013– Regular media appearances  
Grand Canyon National Park, "Minute Out In It," [tinyurl.com/gcmooi](http://tinyurl.com/gcmooi), April 2023  
DU Magazine, "Galaxy Hopping at Chamberlin," [tinyurl.com/gxhop](http://tinyurl.com/gxhop), February 2023  
DU News, "Planetary Peekaboo Wednesday Night," [tinyurl.com/planpeek](http://tinyurl.com/planpeek), December 2022  
Colorado Sun, "There Will Be a Total Eclipse..." [tinyurl.com/hoffman-cs1](http://tinyurl.com/hoffman-cs1), November 2022  
CPR *Colorado Matters*, "Images from Webb Telescope..." [tinyurl.com/hoffman-cpr2](http://tinyurl.com/hoffman-cpr2), July 2022  
9News, interview about Jupiter in opposition, June 2019  
Denver Post, "Asteroid with Own Moon..." [tinyurl.com/hoffman-dp1](http://tinyurl.com/hoffman-dp1), May 2019  
Denver Post, "Cool Things to Watch..." [tinyurl.com/hoffman-dp2](http://tinyurl.com/hoffman-dp2), January 2019  
Denver Post, "The First Meteor Shower of 2019..." [tinyurl.com/hoffman-dp3](http://tinyurl.com/hoffman-dp3), January 2019  
Denver Post, "Hundreds of Green Fireballs..." [tinyurl.com/hoffman-dp4](http://tinyurl.com/hoffman-dp4), December 2018  
CPR *Colorado Matters*, "CO Astronomers Reflect..." [tinyurl.com/hoffman-cpr](http://tinyurl.com/hoffman-cpr), May 2015  
*Good Living By Design* Internet radio show, guest interview, August 2013
- 2008– Presenter at multiple public events at DU's Chamberlin Observatory  
Participation included a star party in conjunction with an astronomy-themed concert by the Colorado Chorale (2018) and speaking about women in astronomy in honor of the International Year of Astronomy (2008).
- 2012, Workshop organizer, DU CARE conference, 2012 and DU Day of Action, 2014  
2014 Organized STEM workshops for a math/science-focused college workshop aimed at female African-American students and a college access day for at-risk elementary students in Denver.

## Service and Other Professional Activities

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### Sample recent service at DU

- 2021– Director, Chamberlin Observatory  
Collaborate with Denver Astronomical Society to offer public astronomy programming, provide community engagement, and oversee historical building and instrument maintenance.
- 2020– Co-chair, NSM Equity and Racial Justice Committee
- 2020– Collaborator, iChange and NSF ADVANCE (MERISTEM) institutional transformation projects
- 2011– Physics & Astronomy Undergraduate Committee Chair

- 2022–23 Vice Provost for Faculty Affairs Search Committee
- 2018–20 NSM Promotion and Tenure Committee
- 2016–18 DU IMPACT 2025 Faculty Talent, Excellence, and Diversity Implementation Committee

### Sample professional service and activities

- 2014– Science advisory team member, various instrumentation projects
  - Giant Magellan Telescope polarimeter working group #2, 2023–present
  - Polstar* UV space polarimeter, 2019–present (NASA SMEX proposal planned)
  - GPOL Gemini polarization modulator, PI, 2018–present
  - Arago* UV and visible space polarimeter, 2014–present (ESA M7 proposal planned)
  - Giant Magellan Telescope polarimeter working group, 2014–18
  - Thirty Meter Telescope Polarimetry and Time-Resolved Astronomy Working Group, 2013–15
- 2023 Proposal reviewer for Astronomer in Residence Program, Grand Canyon Conservancy
- 2020–21 Co-organizer, splinter session “Massive Stars in Colliding Wind Binaries,” American Astronomical Society Meeting #237, January 2021
- 2013– Local agent and Lead Agent, American Astronomical Society  
Liaison between Denver-area astronomers and the AAS. Since 2018, coordinate Agent activities.
- 2010– Scientific Organizing Committee member for professional conferences
  - Astrophysical Polarimetry in the Time-Domain Era*, Lecco, Italy, September 2022
  - IAUS 360: Astronomical Polarimetry 2020: New Era of Multiwavelength Polarimetry*, Hiroshima, Japan, 2021
  - IAUS 329: The Lives and Death-Throes of Massive Stars*, New Zealand, 2016
  - Stellar Polarimetry: From Birth to Death*, Madison, WI, 2011
- 2005– Proposal reviewer for multiple NSF and NASA panels; over 250 proposals reviewed
- 2005– Manuscript referee for professional journals  
*Astronomical Journal*, *Astrophysical Journal*, *Astrophysical Journal Letters*, *Monthly Notices of the Royal Astronomical Society*, *Nature Astronomy*, *Philosophical Transactions A*
- 2000– Member, Sigma Xi, the Scientific Research Society
- 1994– Member, American Astronomical Society