

Joseph DeRose

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EMPLOYMENT DETAILS

Chamberlain Fellow <i>Lawrence Berkeley National Laboratory</i>	2021-present
Postdoctoral Scholar <i>University of California, Santa Cruz & University of California, Berkeley</i>	2019-2021

EDUCATION

PhD Physics <i>Stanford University</i> Thesis advisor: Risa Wechsler	2014-2019
BA Physics and Mathematics <i>University of California, Berkeley</i> Magna Cum Laude with honors in physics and mathematics.	2009-2013

FELLOWSHIPS AND AWARDS

- Chamberlain Prize Fellowship (5yr position), Lawrence Berkeley National Laboratory
- Paul Giddings Fellow, Kavli Institute for Particle Astrophysics and Cosmology

RESEARCH INTERESTS

- Large scale structure probes of dark energy, dark matter, inflation and light relics
- Analytic and simulation based models of galaxy clustering, weak lensing, and the CMB for stage III and stage IV cosmic surveys
- High performance computing, machine learning, statistical inference

SCIENTIFIC COLLABORATIONS

- | | |
|---|--------------|
| • Dark Energy Survey: Builder | 2014-present |
| • Dark Energy Spectroscopic Instrument: Member | 2015-present |
| • Rubin Observatory Dark Energy Science Collaboration: Member | 2015-present |

LEADERSHIP POSITIONS

- Dark Energy Survey Small Scales Analysis Team Convener 2017-2022
- Dark Energy Spectroscopic Instrument: Clusters, Cross-Correlations, and Small-scale Clustering Working Group Co-chair 2022-present
- Rubin Observatory LSST Dark Energy Science Collaboration (DESC): DESI2-DESC Coordination Task Force Convener 2023-present

PUBLICATIONS

Statistics – number of papers: 141, total citations: 8,000+, h-index: 47

Selected Publications (Major Contributions)

19. To, C. H.; **DeRose, J.**; et al., “[Buzzard to Cardinal: Improved Mock Catalogs for Large Galaxy Surveys](#)”, *astro-ph/2303.12104*.
18. **DeRose, J.** et al., “[Aemulus \$\nu\$: precise predictions for matter and biased tracer power spectra in the presence of neutrinos](#)”, *JCAP* **7**, 54 (2023).
17. **DeRose, J.** et al., “[Precision Redshift-Space Galaxy Power Spectra using Zel’dovich Control Variates](#)”, *JCAP* **02**, 008 (2023).
16. **DeRose, J.** et al., “[Neural network acceleration of large-scale structure theory calculations](#)”, *JCAP* **4**, 56 (2022).
15. Kokron, N.; **DeRose, J.** et al., “[Priors on red galaxy stochasticity from hybrid effective field theory](#)”, *MNRAS* **514**, 2 (2022).
14. Kokron, N.; Chen, S.; White, M.; **DeRose, J.**; Maus, M., “[Accurate predictions from small boxes: variance suppression via the Zel’dovich approximation](#)”, *JCAP* **09**, 059 (2022).
13. Chen, S.; White, M.; **DeRose, J.**; and Kokron, N., “[Cosmological analysis of three-dimensional BOSS galaxy clustering and Planck CMB lensing cross correlations via Lagrangian perturbation theory](#)”, *JCAP* **7**, 41 (2022).
12. White, M.; Zhou, R.; **DeRose, J.** et al., “[Cosmological constraints from the tomographic cross-correlation of DESI Luminous Red Galaxies and Planck CMB lensing](#)”, *JCAP* **2022**, 2 (2022).
11. Wechsler, R. H.; **DeRose, J.**; Busha, M. et al., “[ADDGALS: Simulated Sky Catalogs for Wide Field Galaxy Surveys](#)”, *ApJ* **931**, 2 (2022).
10. **DeRose, J.**; Becker, M.; and Wechsler, R., “[Modeling Redshift-Space Clustering with Abundance Matching](#)”, *ApJ* **940**, 13D (2022).
9. Pandey, S.; Krause, E.; **DeRose, J.** et al., “[Dark Energy Survey Year 3 Results: Constraints on cosmological parameters and galaxy bias models from galaxy clustering and galaxy-galaxy lensing using the redMaGiC sample](#)”, *PRD* **106**, 4 (2022).
8. **DeRose, J.**, Wechsler, R. H.; Becker, M. et al., “[Dark Energy Survey Year 3 results: cosmology from combined galaxy clustering and lensing – validation on cosmological simulations](#)”, *PRD* **105**, 12 (2022).
7. DES Collaboration et al., “[Dark Energy Survey Year 3 Results: Cosmological Constraints from Galaxy Clustering and Weak Lensing](#)”, *PRD* **105**, 2 (2022).
6. Kokron, N.; **DeRose, J.**; Chen, S.F. et al., “[The cosmology dependence of galaxy clustering and lensing from a hybrid N-body-perturbation theory model](#)”, *MNRAS* **505**, 1 (2021).

5. **DeRose, J.**; Wechsler, R. H.; Becker, M. R. et al., “The Buzzard Flock: Dark Energy Survey Synthetic Sky Catalogs”, *astro-ph/1901.02401*.
4. **DeRose, J.**; Wechsler, R. H.; Tinker, J. L. et al., “The Aemulus Project I: Numerical Simulations for Precision Cosmology”, *ApJ* **875**, 69D (2019).
3. MacCrann, N.; **DeRose, J.**; Wechsler, R. H. et al., “DES Y1 Results: Validating cosmological parameter estimation using simulated Dark Energy Surveys”, *MNRAS* **480**, 4614-4635 (2018).
2. Friedrich, O.; Gruen, D.; **DeRose, J.** et al., “Density split statistics: joint model of counts and lensing in cells”, *PRD* **98**, 2 (2017).
1. DES Collaboration et al., “Dark Energy Survey Year 1 Results: Cosmological Constraints from Galaxy Clustering and Weak Lensing”, *PRD* **98**, 4 (2018).

Other Publications

122. Zhou, C. et al., “The intrinsic alignment of red galaxies in DES Y1 redMaPPer galaxy clusters”, *MNRAS* **526**, 323Z (2023).
121. Sanchez, C. et al., “The Dark Energy Survey Year 3 high-redshift sample: selection, characterization, and analysis of galaxy clustering”, *MNRAS* **525**, 3896S (2023).
120. Ruggeri, R. et al., “A data compression and optimal galaxy weights scheme for Dark Energy Spectroscopic Instrument and weak lensing data sets”, *MNRAS* **525**, 3865R (2023).
119. Boquet, S. et al., “SPT Clusters with DES and HST Weak Lensing. I. Cluster Lensing and Bayesian Population Modeling of Multi-Wavelength Cluster Datasets”, *astro-ph/2310.12213*.
118. Gatti, M. et al., “Detection of the significant impact of source clustering on higher-order statistics with DES Year 3 weak gravitational lensing data”, *MNRAS* **tmpL**, 142G (2023).
117. Anbajagane, D. et al., “Beyond the 3rd moment: A practical study of using lensing convergence CDFs for cosmology with DES Y3”, *MNRAS* **tmpL**, 2997A (2023).
116. McCullough, J. et al., “DESI Complete Calibration of the Color-Redshift Relation (DC3R2): Results from early DESI data”, *astro-ph/2309.13109*.
115. Zhou, R. et al., “DESI luminous red galaxy samples for cross-correlations”, *astro-ph/2309.06443*.
114. Samuroff, S. et al., “The Dark Energy Survey Year 3 and eBOSS: constraining galaxy intrinsic alignments across luminosity and colour space”, *MNRAS* **524**, 2195S (2023).
113. Hadzhiyska, B. et al., “Mitigating the noise of DESI mocks using analytic control variates”, *astro-ph/2308.12343*.
112. Elvin-Poole, J. et al., “Magnification modeling and impact on cosmological constraints from galaxy clustering and galaxy-galaxy lensing”, *MNRAS* **524**, 2195S (2023).
111. Zhang, Z. et al., “Incorporating galaxy cluster triaxiality in stacked cluster weak lensing analyses”, *MNRAS* **523**, 1994Z (2023).
110. Han, J. et al., “NANCY: Next-generation All-sky Near-infrared Community surveyY”, *astro-ph/2306.11784*.
109. DESI Collaboration, “The Early Data Release of the Dark Energy Spectroscopic Instrument”, *astro-ph/2306.06308*.
108. DESI Collaboration, “Validation of the Scientific Program for the Dark Energy Spectroscopic Instrument”, *astro-ph/2306.06307*.

107. Sanchez, J. et al., “Mapping gas around massive galaxies: cross-correlation of DES Y3 galaxies and Compton-y maps from SPT and Planck”, *MNRAS* **522**, 3163S (2023).
106. DES and KiDS Collaborations et al., “DES Y3 + KiDS-1000: Consistent cosmology combining cosmic shear surveys”, *astro-ph/2305.17173*.
105. Zhai, Z. et al., “The Aemulus Project V: Cosmological constraint from small-scale clustering of BOSS galaxies”, *ApJ* **948**, 99Z (2023).
104. DES Collaboration et al., “Dark Energy Survey Year 3 Results: Constraints on extensions to Λ CDM with weak lensing and galaxy clustering”, *PRD* **107**, 8 (2023).
103. Lange, J. et al., “Constraints on S8 from a full-scale and full-shape analysis of redshift-space clustering and galaxy-galaxy lensing in BOSS ”, *MNRAS* **520**, 5373L (2023).
102. Myles, J. et al., “Mapping variations of redshift distributions with probability integral transforms”, *MNRAS* **519**, 1792M (2023).
101. Chen, A. et al., “Constraining the Baryonic Feedback with Cosmic Shear Using the DES Year-3 Small-Scale Measurements ”, *MNRAS* **518**, 5340C (2023).
100. DES Collaboration et al., “Joint analysis of DES Year 3 data and CMB lensing from SPT and Planck III: Combined cosmological constraints ”, *PRD* **107**, 2 (2023).
99. DES Collaboration et al., “Joint analysis of DES Year 3 data and CMB lensing from SPT and Planck II: Cross-correlation measurements and cosmological constraints ”, *PRD* **107**, 2 (2023).
98. DES Collaboration et al., “Joint analysis of DES Year 3 data and CMB lensing from SPT and Planck I: Construction of CMB Lensing Maps and Modeling Choices ”, *PRD* **107**, 2 (2023).
97. Zhang, T. et al., “Covariance matrices for variance-suppressed simulations ”, *MNRAS* **518**, 3737Z (2023).
96. Amon, A. et al., “Consistent lensing and clustering in a low-S8 Universe with BOSS, DES Year 3, HSC Year 1, and KiDS-1000”, *MNRAS* **518**, 477A (2023).
95. Storey-Fisher et al., “The Aemulus Project VI: Emulation of beyond-standard galaxy clustering statistics to improve cosmological constraints ”, *astro-ph/2210.03203*.
94. Gatti, M. et al., “Dark Energy Survey Year 3 results: cosmology with moments of weak lensing mass maps”, *PRD* **106**, 8 (2022).
93. Giannini, J. et al., “Dark Energy Survey Year 3 Results: Redshift Calibration of the MagLim Lens Sample from the combination of SOMPZ and clustering and its impact on Cosmology”, *astro-ph/2209.05853*.
92. Kovacs, A. et al., “The DES view of the Eridanus supervoid and the CMB cold spot ”, *MNRAS* **510**, 1 (2022).
91. Hearin, A. et al., “Differentiable Predictions for Large Scale Structure with SHAMNet ”, *OJA* **5**, 3 (2022).
90. Leauthaud, A. et al., “Lensing without borders - I. A blind comparison of the amplitude of galaxy-galaxy lensing between independent imaging surveys”, *MNRAS* **510**, 4 (2022).
89. Secco, L. et al., “Dark Energy Survey Year 3 Results: Three-point shear correlations and mass aperture moments ”, *PRD* **105**, 10 (2022).
88. Schlegel, D. et al., “The MegaMapper: A Stage-5 Spectroscopic Instrument Concept for the Study of Inflation and Dark Energy”, *astro-ph/2209.04322*.
87. Schlegel, D. et al., “A Spectroscopic Road Map for Cosmic Frontier: DESI, DESI-II, Stage-5 ”, *astro-ph/2209.03585*.

86. Camacho, H. et al., “Cosmic Shear in Harmonic Space from the Dark Energy Survey Year 1 Data: Compatibility with Configuration Space Results ”, *MNRAS* , (2022).
85. Wu, H. et al., “Optical selection bias and projection effects in stacked galaxy cluster weak lensing ”, *MNRAS* **515**, 3 (2022).
84. Doux, C. et al., “Dark energy survey year 3 results: cosmological constraints from the analysis of cosmic shear in harmonic space”, *MNRAS* **515**, 2 (2022).
83. Zurcher, D. et al., “Dark Energy Survey Year 3 results: Cosmology with peaks using an emulator approach”, *MNRAS* **511**, 2 (2022).
82. Cordero, J. et al., “Dark Energy Survey Year 3 results: Marginalisation over redshift distribution uncertainties using ranking of discrete realisations”, *MNRAS* **511**, 2 (2022).
81. Huang, S. et al., “The Outer Stellar Mass of Massive Galaxies: A Simple Tracer of Halo Mass with Scatter Comparable to Richness and Reduced Projection Effects”, *MNRAS* **515**, 4 (2022).
80. Pandey, S. et al., “Cross-correlation of DES Y3 lensing and ACT/Planck thermal Sunyaev Zel’dovich Effect II: Modeling and constraints on halo pressure profiles”, *PRD* **105**, 12 (2022).
79. Gatti, M. et al., “Cross-correlation of DES Y3 lensing and ACT/Planck thermal Sunyaev Zel’dovich Effect I: Measurements, systematics tests, and feedback model constraints”, *PRD* **105**, 12 (2022).
78. Lokken, M. et al., “Superclustering with the Atacama Cosmology Telescope and Dark Energy Survey: I. Evidence for thermal energy anisotropy using oriented stacking”, *APJ* **2**, 134 (2022).
77. Zacharegkas, G. et al., “Dark Energy Survey Year 3 results: Galaxy-halo connection from galaxy-galaxy lensing”, *MNRAS* **509**, 3119Z (2022).
76. Krause, E. et al., “Dark Energy Survey Year 3 Results: Multi-Probe Modeling Strategy and Validation”, *astro-ph/2105.13548*.
75. Porredon, A. et al., “Dark Energy Survey Year 3 results: Cosmological constraints from galaxy clustering and galaxy-galaxy lensing using the MagLim lens sample”, *PRD* **106**, 10 (2022).
74. Secco, A. et al., “Dark Energy Survey Year 3 Results: Cosmology from Cosmic Shear and Robustness to Modeling Uncertainty”, *PRD* **105**, 2 (2022).
73. Amon, A. et al., “Dark Energy Survey Year 3 Results: Cosmology from Cosmic Shear and Robustness to Data Calibration ”, *PRD* **105**, 2 (2022).
72. Sanchez, C. et al., “Dark Energy Survey Year 3 Results: Exploiting small-scale information with lensing shear ratios ”, *PRD* **105**, 8 (2022).
71. Prat, J. et al., “Dark Energy Survey Year 3 Results: High-precision measurement and modeling of galaxy-galaxy lensing”, *PRD* **105**, 8 (2022).
70. Rodriguez-Monroy, M. et al., “Dark Energy Survey Year 3 Results: Galaxy clustering and systematics treatment for lens galaxy samples ”, *MNRAS* **511**, 2 (2022).
69. Cawthon, R. et al., “Dark Energy Survey Year 3 Results: Calibration of Lens Sample Redshift Distributions using Clustering Redshifts with BOSS/eBOSS”, *MNRAS* **513**, 4 (2022).
68. Everett, S. et al., “Dark Energy Survey Year 3 Results: Measuring the Survey Transfer Function with Balrog”, *ApJS* **258**, 15E (2022).
67. Gatti, M. et al., “Dark Energy Survey Year 3 Results: Clustering Redshifts – Calibration of the Weak Lensing Source Redshift Distributions with redMaGiC and BOSS/eBOSS”, *MNRAS* **510**, 1 (2022).
66. Adhikari, S. et al., “Probing galaxy evolution in massive clusters using ACT and DES: splashback as a cosmic clock ”, *ApJ* **923**, 37A (2021).

65. McClintock, T. et al., “The Aemulus Project IV: Emulating Halo Bias”, *astro-ph/1907.13167*.
64. Mao, Y.Y. et al., “DESCQA: Synthetic Sky Catalog Validation Framework”, *ASCL*, (2018).
63. Davis, C. et al., “Dark Energy Survey Year 1 Results: Cross-Correlation Redshifts in the DES – Calibration of the Weak Lensing Source Redshift Distributions ”, *astro-ph/1710.02517*.
62. Krause, E. et al., “Dark Energy Survey Year 1 Results: Multi-Probe Methodology and Simulated Likelihood Analyses”, *astro-ph/1706.09359*.
61. Lee, S. et al., “Probing gravity with the DES-CMASS sample and BOSS spectroscopy”, *MNRAS* **509**, 4982L (2021).
60. Massara, E. et al., “Line confusion in spectroscopic surveys and its possible effects: shifts in Baryon Acoustic Oscillations position ”, *MNRAS* **508**, 3 (2021).
59. Friedrich, O. et al., “Dark Energy Survey year 3 results: covariance modelling and its impact on parameter estimation and quality of fit”, *MNRAS* **508**, 3 (2021).
58. Shin, T. et al., “The mass and galaxy distribution around SZ-selected clusters”, *MNRAS* **507**, 4 (2021).
57. Bravo, M. et al., “Simultaneous Estimation of Large-scale Structure and Milky Way Dust Extinction from Galaxy Surveys”, *ApJ* **921**, 108 (2021).
56. Lee, S. et al., “Galaxy-galaxy lensing with the DES-CMASS catalogue: measurement and constraints on the galaxy-matter cross-correlation ”, *MNRAS in press*, (2021).
55. Lange, J. et al., “Five percent measurements of the growth rate from simulation-based modelling of redshift-space clustering in BOSS LOWZ”, *MNRAS* **509**, 2 (2021).
54. Hartley, W. et al., “Dark Energy Survey Year 3 Results: Deep Field optical + near-infrared images and catalogue”, *MNRAS in press*, (2021).
53. Lemos, P. et al., “Assessing tension metrics with dark energy survey and Planck data”, *MNRAS* **505**, 4 (2021).
52. Tinker, J. et al., “Probing the galaxy–halo connection with total satellite luminosity”, *MNRAS* **505**, 4 (2021).
51. Jeffrey, N. et al., “Dark Energy Survey Year 3 results: Curved-sky weak lensing mass map reconstruction”, *MNRAS* **505**, 3 (2021).
50. Myles, J. et al., “Dark Energy Survey Year 3 results: redshift calibration of the weak lensing source galaxies ”, *MNRAS* **505**, 3 (2021).
49. Abbott, T. et al., “The Dark Energy Survey Data Release 2 ”, *ApJ* **255**, 2 (2021).
48. Myles, J. et al., “Spectroscopic quantification of projection effects in the SDSS redMaPPer galaxy cluster catalogue”, *MNRAS* **505**, 1 (2021).
47. Doux, C. et al., “Dark energy survey internal consistency tests of the joint cosmological probes analysis with posterior predictive distributions”, *MNRAS* **503**, 2 (2021).
46. To, C. et al., “Dark Energy Survey Year 1 Results: Cosmological Constraints from Cluster Abundances, Weak Lensing, and Galaxy Correlations ”, *PRL* **126**, 141301 (2021).
45. Huang, H. et al., “Dark energy survey year 1 results: Constraining baryonic physics in the Universe”, *MNRAS* **502**, 4 (2021).
44. To, C. et al., “Combination of cluster number counts and two-point correlations: validation on mock Dark Energy Survey”, *PRL* **502**, 3 (2021).

43. Tanoglidis, H. et al., “Shadows in the Dark: Low-surface-brightness Galaxies Discovered in the Dark Energy Survey”, *ApJS* **252**, 18 (2021).
42. Pandey, S. et al., “Perturbation theory for modeling galaxy bias: Validation with simulations of the Dark Energy Survey”, *ApJS* **102**, 123522 (2020).
41. Schmidt, S. et al., “Evaluation of probabilistic photometric redshift estimation approaches for The Rubin Observatory Legacy Survey of Space and Time (LSST)”, *ApJS* **499**, 2 (2020).
40. Pereira, M. E. S. et al., “ μ_* Masses: Weak Lensing Calibration of the Dark Energy Survey Year 1 redMaPPer Clusters using Stellar Masses”, *MNRAS* **498**, 4 (2020).
39. Gatti, M et al., “Dark Energy Survey Year 3 results: cosmology with moments of weak lensing mass maps – validation on simulations”, *MNRAS* **498**, 3 (2020).
38. Hartley, W. et al., “The impact of spectroscopic incompleteness in direct calibration of redshift distributions for weak lensing surveys”, *MNRAS* **496**, 4 (2020).
37. DES Collaboration et al., “Dark Energy Survey Year 1 Results: Cosmological Constraints from Cluster Abundances and Weak Lensing”, *PRD* **102**, 023509 (2020).
36. Palmese, A et al., “Stellar mass as a galaxy cluster mass proxy: application to the Dark Energy Survey redMaPPer clusters”, *MNRAS* **493**, 4591P (2020).
35. Carter, P. et al., “The impact of the fiducial cosmology assumption on BAO distance scale measurements”, *MNRAS* **494**, 2076C (2020).
34. Varga, T.; DeRose, J.; Gruen, D. et al., “Dark Energy Survey Year 1 results: validation of weak lensing cluster member contamination estimates from P(z) decomposition”, *MNRAS* **489**, 2511V (2019).
33. Fang, Y. et al., “Dark Energy Survey year 1 results: the relationship between mass and light around cosmic voids”, *MNRAS* **490**, 3573F (2019).
32. Korytov, D. et al., “CosmoDC2: A Synthetic Sky Catalog for Dark Energy Science with LSST”, *ApJS* **245**, 26K (2019).
31. Pandey, S. et al., “Constraints on the redshift evolution of astrophysical feedback with Sunyaev-Zel’dovich effect cross-correlations”, *PhRvD* **100f**, 3519P (2019).
30. Martens, D. et al., “Effects of NII and *Alpha* Line Blending on the WFIRST Galaxy Redshift Survey”, *MNRAS* **485**, 211M (2019).
29. Leistedt, B. et al., “Hierarchical modeling and statistical calibration for photometric redshifts”, *ApJ* **881**, 80L (2019).
28. DES Collaboration et al., “Dark Energy Survey Year 1 Results: Joint Analysis of Galaxy Clustering, Galaxy Lensing, and CMB Lensing Two-point Functions”, *PhRvD* **100b**, 3541A (2019).
27. Omori, Y. et al., “Dark Energy Survey Year 1 Results: Cross-correlation between DES Y1 galaxy weak lensing and SPT+Planck CMB weak lensing”, *PhRvD* **100d**, 3517O (2019).
26. DES Collaboration et al., “Dark Energy Survey Year 1 Results: Constraints on Extended Cosmological Models from Galaxy Clustering and Weak Lensing”, *PhRvD* **99l**, 3505A (2019).
25. Costanzi, M. et al., “Methods for cluster cosmology and application to the SDSS in preparation for DES Year 1 release”, *MNRAS* **487**, 48C (2019).
24. Chuang, C.H. et al., “UNIT project: Universe *N*-body simulations for the Investigation of Theoretical models from galaxy surveys”, *MNRAS* **487**, 48C (2019).
23. DES Collaboration et al., “Cosmological Constraints from Multiple Probes in the Dark Energy Survey”, *PhRvL* **122q**, 1301A (2019).

22. Shin, T. et al., “Measurement of the Splashback Feature around SZ-selected Galaxy Clusters with DES, SPT and ACT”, *ApJ* **872**, 53M (2019).
21. Buchs, R.; Davis, C. et al., “Phenotypic redshifts with self-organizing maps: A novel method to characterize redshift distributions of source galaxies for weak lensing”, *MNRAS* **489**, 820B (2019).
20. McClintock, T. et al., “The Aemulus Project II: Emulating the Halo Mass Function”, *ApJ* **872**, 95Z (2019).
19. Zhai, Z. et al., “The Aemulus Project III: Emulation of the Galaxy Correlation Function”, *ApJ* **874**, 53M (2019).
18. Abbott, T. M. C. et al., “The Dark Energy Survey Data Release 1”, *ApJS* **239**, 18A (2018).
17. Gruen, D. et al., “Density split statistics: Cosmological constraints from counts and lensing in cells in DES Y1 and SDSS”, *PRD* **98**, 2 (2018).
16. Cawthon, R. et al., “Dark Energy Survey Year 1 Results: calibration of redMaGiC redshift distributions in DES and SDSS from cross-correlations”, *MNRAS* **481**, 2427-2443 (2018).
15. Abbott, T. M. C. et al., “Dark Energy Survey Year 1 Results: A Precise H0 Estimate from DES Y1, BAO, and D/H Data”, *MNRAS* **481**, 2427-2443 (2018).
14. McClintock, T. et al., “Dark Energy Survey Year 1 Results: Weak Lensing Mass Calibration of redMaPPer Galaxy Clusters”, *MNRAS* **482**, 1352-1378 (2018).
13. Costanzi, M. et al., “Modeling projection effects in optically-selected cluster catalogues”, *MNRAS* **482**, 490-505 (2018).
12. Troxel, M. A. et al., “Survey geometry and the internal consistency of recent cosmic shear measurements”, *MNRAS* **479**, 4998-5004 (2018).
11. Troxel, M. A. et al., “Dark Energy Survey Year 1 Results: Cosmological Constraints from Cosmic Shear”, *PRD* **98**, 4 (2018).
10. Hoyle, B. et al., “Dark Energy Survey Year 1 Results: redshift distributions of the weak-lensing source galaxies”, *MNRAS* **478**, 592-610 (2018).
9. Malz, A. et al., “Approximating photo-z PDFs for large surveys”, *AJ* **156**, 35 (2018).
8. Gatti, M. et al., “Dark Energy Survey Year 1 results: cross-correlation redshifts - methods and systematics characterization”, *MNRAS* **477**, 1664-1682 (2018).
7. Chang, C. et al., “Dark Energy Survey Year 1 results: curved-sky weak lensing mass map”, *MNRAS* **475**, 3165-3190 (2018).
6. Mao, Y.Y. et al., “DESCQA: An Automated Validation Framework for Synthetic Sky Catalogs”, *ApJ Supp.* **234**, 36 (2018).
5. Frohmaier, C. et al., “Real-time Recovery Efficiencies and Performance of the Palomar Transient Factory’s Transient Discovery Pipeline”, *ApJ Supplement* **230**, 4 (2017).
4. Kovács, A. et al., “Imprint of DES superstructures on the cosmic microwave background”, *MNRAS* **465**, 4166 (2018).
3. Sánchez, C. et al., “Cosmic voids and void lensing in the Dark Energy Survey Science Verification data”, *MNRAS* **465**, 746 (2017).
2. Kwan, J. et al., “Cosmology from large-scale galaxy clustering and galaxy-galaxy lensing with Dark Energy Survey Science Verification data”, *MNRAS* **464**, 4045 (2017).
1. Pan, Y.-C. et al., “The host galaxies of Type Ia supernovae discovered by the Palomar Transient Factory”, *MNRAS* **438**, 1391 (2014).

GRANTS AND COMPUTING ALLOCATIONS

- Fugaku, “Correlated Simulations for Joint Analysis of CMB and LSS”, (Collaborator, 2023-2026).
- NASA ATP, “Leveraging Weak Gravitational Lensing - Redshift Space Distortions Cross-correlations”, (Collaborator, 2022-2024).
- XSEDE, “N-body Simulations for Cosmic Acceleration and Neutrino Science with Wide Field Galaxy Surveys”, 320000 node hours (Co-I, 3/22 - 3/23).
- XSEDE, “N-body Simulations for Cosmic Acceleration and Neutrino Science with Wide Field Galaxy Surveys”, 43000 node hours (Co-I, 1/21 - 1/22).
- XSEDE, “Cosmological Simulations of Dark Energy and Massive Neutrinos for Wide Field Galaxy Surveys”, 4000 node hours (PI, 6/20 - 6/21).
- NERSC, “Cosmological Simulations for Sky Surveys”, 5M NERSC hours (co-I, 1/22 - 1/23).
- NERSC, “Cosmological Simulations for Sky Surveys”, 5M NERSC hours (co-I, 1/21 - 1/22).
- NERSC, “Cosmological Simulations for Sky Surveys”, 7M NERSC hours (co-I, 1/20 - 1/21).
- NERSC, “Cosmological Simulations for Sky Surveys”, 7M NERSC hours (co-I, 1/19 - 1/20).
- NERSC, “Cosmological Simulations for Sky Surveys”, 9M NERSC hours (co-I, 1/18 - 1/19).

SELECTED TALKS

24. SLAC Summer Institute: Artificial Intelligence in Fundamental Physics, SLAC, 8/23 (**Invited**)
23. Future Science with CMB x LSS , YITP, Kyoto, Japan, 4/23 (**Invited**)
22. Cosmology Colloquium, SLAC, 2/23 (**Invited**)
21. Cosmology Seminar, Kavli IPMU, 11/22 (**Invited**)
20. Intriguing Inconsistencies in the Growth of Structure over Cosmic Time, Sesto, Italy, 7/22 (**Invited**)
19. Berkeley Center for Cosmological Physics, Vipolze Conference, Smartno, Slovenia, 7/22
18. DES Y3 Highlight Plenary, DESI Collaboration Meeting, 6/22 (**Invited**)
17. Astro Seminar, NYU, 3/22 (**Invited**)
16. Astronomy Colloquium, University of British Columbia, 10/21 (**Invited**)
15. Astrophysics Colloquium, Stanford University, 6/21 (**Invited**)
14. Dark Energy Survey Year 3 Results Webinar, Virtual, 5/21
13. Institute for Nuclear and Particle Astrophysics Seminar, LBNL, 1/21 (**Invited**)
12. German Center for Cosmological Lensing Seminar, Remote talk, 5/20 (**Invited**)
11. Spectroscopic Surveys: Are We Ready For the Future?, UC Berkeley, 1/20 (**Invited**)
10. AAS Thesis Spotlight, Seattle, 1/19
9. FLASH Seminar, UC Santa Cruz, 9/18 (**Invited**)
8. Astro Seminar, NYU, 9/18 (**Invited**)
7. Berkeley Cosmology Seminar, UC Berkeley, 9/18 (**Invited**)

6. Modeling the Extragalactic Sky, UC Berkeley, 1/18 (**Invited**)
5. Astrophysics Colloquium, Stanford University, 9/17 (**Invited**)
4. Webinar, Laboratório Interinstitucional de e-Astronomia, Brazil, 7/17 (**Invited**)
3. COSMO16, University of Michigan, 8/16
2. KIPAC Tea, Stanford University, 9/16
1. Mock Santiago: Preparing for the Next Generation of Surveys, Universidad Catolica, Santiago, Chile, 4/16 (**Invited**)

STUDENTS (CO)SUPERVISED

- Vincent Su, B.S. Stanford '17 (now PhD student in physics at UC Berkeley)
- Denise Lepore, B.S. CSU Pomona '19
- Amara McCune, B.S. Stanford '18 (now PhD student in physics at UC Santa Barbara)
- Duncan Wood, B.S. Stanford '17 (now PhD student in physics at UC Santa Cruz)
- Judah Luberto, B.S. UC Santa Cruz '22
- Nishant Mishra, B.S. UC Berkeley '21 (now PhD student in astrophysics at University of Michigan)
- Shi-Fan Chen, Ph.D UC Berkeley '22 (now postdoc at the Institute for Advanced Study)
- Nickolas Kokron, Ph.D Stanford '23 (now postdoc at Princeton)
- Enia Xhakaj, Ph.D UC Santa Cruz '23 (now postdoc at Argonne National Lab)
- Rose Hinson, B.S. UC Berkeley '24 (expected)

SERVICE AND OUTREACH

- DESI High coordinator 2021-present
- LBNL INPA Seminar Committee 2021-2022
- DESI Education and Public Outreach Committee, 2021-2022
- Astro Scholar Mentor, Berkeley Astronomy Department, 2020-2021
- Organizer for Astronomy on Tap (2016-2020)
- Lead Organizer for “Meetings of Astrophysics Students at Stanford” seminar series (2016-2018)
- Lead Organizer for [Stanford Physics Computing Bootcamp](#) (2016-2018)
- NSF AAG Panelist (2023)
- Referee: Astrophysical Journal, Monthly Notices of the Royal Astronomical Society, Journal of Cosmology and Astroparticle Physics, Astronomy & Astrophysics

TEACHING

- Spring 2015: **PHYS25 Modern Physics**
T.A.
- Winter 2017: **PHYS16 The Origin and Development of the Cosmos**
T.A.
- Winter 2018: **PHYS16 The Origin and Development of the Cosmos**
T.A.

REFERENCES

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