

# Emily R. Liepold

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## Education

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<b>University of California, Berkeley</b> <i>Ph.D., Physics</i>	2023
<b>University of California, Berkeley</b> <i>M.A., Physics</i>	2019
<b>University of Chicago</b> <i>B.A., Physics with Honors, specialization in Astronomy and Astrophysics</i>	2016

## Research Positions

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<b>Postdoctoral Researcher</b> <i>Department of Astronomy, University of California, Berkeley</i>	October 2023 – Present <i>Berkeley, CA</i>
<b>Graduate Student Researcher</b> <i>Department of Astronomy, University of California, Berkeley</i>	April 2018 – August 2023 <i>Berkeley, CA</i>
<b>Post-Baccalaureate Researcher</b> <i>James Franck Institute and MRSEC, University of Chicago</i>	June 2016 – August 2017 <i>Chicago, IL</i>
<b>Undergraduate Researcher</b> <i>James Franck Institute, University of Chicago</i>	March 2015 – June 2016 <i>Chicago, IL</i>

## Publications

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10. Liepold, E. R. "Realizing the Full Potential: Detecting and Measuring Supermassive Black Holes in Triaxial Galaxies," University of California, Berkeley ProQuest Dissertations Publishing, 2023. 30633852.
9. Liepold, E. R., Ma, C.-P., & Walsh, J. L., "Keck Integral-Field Spectroscopy of M87 Reveals an Intrinsically Triaxial Galaxy and a Revised Black Hole Mass," 2023, *Astrophys. J. Lett.*, 945 L35.
8. Pilawa, J. D., Liepold, E. R., Delgado Andrade, S. C., et al., "The MASSIVE Survey. XVII. A Triaxial Orbit-based Determination of the Black Hole Mass and Intrinsic Shape of Elliptical Galaxy NGC 2693," 2022, *Astrophys. J.*, 928, 178.
7. Quenneville, M. E., Liepold, E. R., & Ma, C.-P., "Triaxial Orbit-based Dynamical Modeling of Galaxies with Supermassive Black Holes and an Application to Massive Elliptical Galaxy NGC 1453," 2022, *Astrophys. J.*, 926, 30.
6. Quenneville, M. E., Liepold, E. R., & Ma, C.-P., "Dynamical Modeling of Galaxies and Supermassive Black Holes: Axisymmetry in Triaxial Schwarzschild Orbit Superposition Models," 2021, *Astrophys. J. Suppl. Ser.*, 254, 25.
5. Liepold, E. R., Quenneville, M. E., & Ma, C.-P., et al., "The MASSIVE Survey. XV. A Stellar Dynamical Mass Measurement of the Supermassive Black Hole in Massive Elliptical Galaxy NGC 1453," 2020, *Astrophys. J.*, 891, 4.
4. Liepold, E. R., Smith, A., Lin, B., de Pablo, J., & Rice, S. A., "Pair and many-body interactions between ligated Au nanoparticles," 2019, *J. Chem. Phys.* 150, 044904.
3. Krebs, Z., Roitman, A. B., Nowack, L.N., Liepold, E. R., Lin, B., & Rice, S. A., "Transient Structured Fluctuations in a Two-dimensional System with Multiple Ordered Phases," 2018, *J. Chem. Phys.* 149, 034503.

2. Wolfson, M., **Liepold, E. R.**, Lin, B., & Rice, S. A., "A comment on the position dependent diffusion coefficient representation of structural heterogeneity," 2018, J. Chem. Phys. 148, 194901.

1. **Liepold, E. R.**, Zarcone, R., Heumann, T., Rice, S. A., & Lin, B., "Colloid-colloid hydrodynamic interaction around a bend in a quasi-one-dimensional channel," 2017, Phys. Rev. E 96, 012606.

### Talks

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UC Berkeley Exit Seminar, Berkeley, CA	May 2023
EHT group meeting, Black Hole Initiative, Harvard University, Cambridge, MA	March 2023
GMT Community Science Meeting, Sedona, AZ	Sept 2022
Astrophysics Roundtable, Berkeley, CA	Nov 2021
APS March Meeting, New Orleans, LA	March 2017

### Successful Telescope Proposals (as Co-Investigator)

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5 Keck KCWI Proposals, 2020-2022	6.0 Nights
4 Keck OSIRIS Proposals, 2022-2023	5.0 Nights
2 JWST NIRSPEC Proposals, 2021-2024	32.4 hours

### Successful Computational Resource Proposals (as Co-Investigator)

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2 XSEDE proposals, 2020-2021	3,468,000 core-hours
1 ACCESS proposal, 2022	750,000 core-hours

### Teaching Experience

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<b>Reader, Astronomy C202</b>	Spring 2023
<i>Astrophysical Fluid Dynamics</i>	UC Berkeley
<b>Reader, Astronomy C228</b>	Fall 2021, Fall 2022
<i>Extragalactic Astronomy and Cosmology</i>	UC Berkeley
<b>Graduate Student Instructor, Astronomy C202</b>	Spring 2022
<i>Astrophysical Fluid Dynamics</i>	UC Berkeley
<b>Graduate Student Instructor, Astronomy C161</b>	Spring 2019
<i>Relativistic Astrophysics and Cosmology</i>	UC Berkeley
<b>Graduate Student Instructor, Physics 7A</b>	Fall 2017, Spring 2018, Fall 2018
<i>Physics for Scientists and Engineers</i>	UC Berkeley
<b>Physics Core Tutor</b>	Spring 2015 - Spring 2016
<i>Core Tutor Program</i>	University of Chicago
<b>Teaching Assistant, Math 13100-13200-13300</b>	Fall 2013 - Spring 2015
<i>Elementary Functions and Calculus I-II-III</i>	University of Chicago

### Awards and Honors

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<b>Mary Elizabeth Uhl Prize</b>	May 2023
<i>For outstanding scholarly achievement by a graduate student finishing their dissertation in Astronomy or in Physics</i>	

### Mentoring Experience

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<b>Ningyuan Xu</b>	2022-2023
<i>Explored improvements to orbit model parameter search scheme</i>	UC Berkeley
<b>Shaunak Modak</b>	2020-2021
<i>Developed and tested methods for generating mock galaxy data</i>	UC Berkeley

**Brandon Read**

*REU student from UCLA; assisted in expanding a code for modelling Au nanoparticles*

**Linsey Nowack**

*Metcalf intern; Explored novel phase transitions in 2D simulations*

2017

*University of Chicago*

2016-2017

*University of Chicago*

*Specialized Skills*

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**Programming Languages:** Python, IDL, C, Fortran

**Computing:** Linux, bash, L<sup>A</sup>T<sub>E</sub>X, git

**Data Reduction:** pPXF, vorbin, IRAF, Astropy, MGEfit

**Instruments:** KCWI, NIFS, HST