

# ALIZA BEVERAGE

Website: [alizabeverage.github.io](https://alizabeverage.github.io)

Email: [abeverage@berkeley.edu](mailto:abeverage@berkeley.edu)

## EDUCATION

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University of California Berkeley, *Ph.D, Astrophysics* May 2025 (expected)

*Advisors:* Mariska Kriek and Dan Weisz

University of California Berkeley, *Masters of Arts, Astrophysics* August 2020

University of Minnesota Twin Cities, *Bachelor of Science, Physics and Astrophysics* June 2018

*Advisor:* Claudia Scarlata

## RESEARCH EXPERTISE

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The formation and evolution of massive galaxies, chemical abundances, chemical evolution, star-formation quenching, stellar population modeling, the stellar IMF, hierarchical Bayesian modeling, optical/NIR spectroscopy

## RESEARCH POSITIONS & EXPERIENCE

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NSF Graduate Research Fellow, University of California, Berkeley 2019–2024

Undergraduate Research Assistant, University of Minnesota 2015–2019

SURF Summer Research Student, Cosmic DAWN Center, Copenhagen Summer 2018

REU Summer Research Student, CfA | Harvard & Smithsonian Summer 2017

REU Summer Research Student, LIGO Collaboration, LSU Summer 2016

## SELECTED AWARDS AND HONORS

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NSF Graduate Research Fellowship 2019–2024

Robert J. Trumpler Graduate Student Excellence Award May 2024

*In recognition of academic excellence and outstanding record of involvement in the Berkeley department or wider astronomical community.*

H2H8 Fellowship (\$10,000) 2022

AAS International Travel Grant (\$6,000) 2021, 2023, 2024

Outstanding Astronomy Graduate Student Instructor 2021

Maria Cranor Fellowship (\$18,000) 2019–2025

Astronaut Scholarship (\$10,000) 2018–2019

## TELESCOPE PROPOSALS

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### *James Webb Space Telescope (as co-PI)*

2. Cycle 3: [GO 5629](#), Extremely deep spectroscopy of quiescent galaxies at  $z \sim 0.7$ : A direct measurement of the stellar initial mass function beyond the low-redshift universe (40.3 hrs NIRspec)

1. Cycle I: [GO 2110](#), Ultra-deep continuum spectroscopy of quiescent galaxies at  $1.0 < z < 2.5$ : chemical abundances and stellar kinematics (22.7 hrs NIRspec)

### **Observing experience:**

Keck Telescopes (LRIS/MOSFIRE, 10 nights)

Mount Lemmon 60" (2MASS, 16 nights)

## OPEN SOURCE SOFTWARE

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`alf`: Chemical abundance fitting code for old stellar systems ([A. Beverage 2024](#))

*A python adaption of `alf` (Conroy et al. 2018)*

## PRESENTATIONS

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### Invited Talks

The Inaugural Tinsley Workshop at Yale University	Oct 2024
Carnegie Observatories Lunch Seminar	Dec 2024
Department of Astronomy, Caltech	Dec 2024
Colloquium, Department of Physics, Washington State University	Nov 2023
UC Santa Cruz Galaxy Workshop	Aug 2023

### Seminars

The Ohio State University Galaxy Seminar	May 2024
Dusty Galaxies Seminar, Leiden University	May 2022
Coffee Talk, University of Edinburgh	June 2023
Galread, Princeton University	May 2022
UC Berkeley Lunch Talk	2021, 2023

### Conference talks

AGN feedback and Star Formation Across Cosmic Scales and Time, <i>Sirolo, Italy</i>	Sept 2024
IAU: The First Chapters of our Cosmic History with <i>JWST</i> , <i>Capetown, South Africa</i>	Aug 2024
A Life Devoted to Stellar Populations, <i>Tenerife, Spain</i>	Oct 2023
Keck Science Meeting, <i>Berkeley, USA</i>	Sept 2023
Charting the metallicity evolution history of the Universe, <i>Catania, Italy</i>	Sept 2022
STScI Multi-Object Spectroscopy Workshop, <i>Baltimore, USA</i>	May 2021

## TEACHING & MENTORSHIP

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<b>Research mentor</b> to Yilun Ma, University of California Berkeley	2020 – 2022
Publication: <i>Two Transitional Galaxies with AGN-Driven Outflows at <math>z \sim 2</math> (in prep.)</i>	
<b>*Graduate Student Instructor</b> , UC Berkeley 7B: Introduction to Astrophysics II	Spring 2020
<b>Graduate Student Instructor</b> , UC Berkeley 7A: Introduction to Astrophysics I	Fall 2019

\* *Awarded Outstanding Astronomy GSI*

## OUTREACH & SERVICE

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<b>Referee</b> The Astrophysical Journal, Astronomy & Astrophysics	2021 – Present
<b>POWER Coordinator</b>	2022 – Present
<i>POWER is a graduate student-led mentoring program and workshop series for Bay Area community college students interested in the physical sciences. I organized and led over 5 workshops that reached over 100 students and included financial aid and support network presentations, career and transfer student panels, and lab tours.</i>	
<b>POWER Mentor</b>	2021
<i>Professional development mentorship to a Bay Area community college student</i>	
<b>MPS Scholars Mentor</b>	2023
<i>Professional development mentorship to a Berkeley undergrad</i>	
<b>MPS Scholars Retreat</b>	Spring 2024
<i>Graduate student panelist at professional development retreat for Berkeley undergrads</i>	
<b>Climate &amp; DEI Committee Rep</b>	2020 – 2021
<i>Graduate student representative on the Berkeley Astronomy DEI committee</i>	
<b>Respect is Part of Research, Facilitator</b>	2021
<b>Grad Student Postdoc Seminar, Organizer</b>	2022 – Present

## PUBLICATION LIST

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4(+1 in prep) First-author, 4 Second- and Third-author ([ADS](#))

### First-author:

5. *Using the Abundance Patterns of Milky Way Stars to Interpret the Chemical Compositions of Quiescent Galaxies*  
**Beverage, A. G.**, D. Weinberg, N. Marcelina Gountanis, M. Kriek, (Submitting in mid-November)
4. *Carbon and Iron Deficiencies in Quiescent Galaxies at  $z=1-3$  from JWST-SUSPENSE: Implications for the Formation Histories of Massive Galaxies*  
**Beverage, A. G.**, M. Slob, M. Kriek, C. Conroy, G. Barro, R. Bezanson, G. Brammer, C. M. Cheng, A. de Graaff, N. M. Förster Schreiber, M. Franx, B. Lorenz, P. E. Mancera Piña, D. Marchesini, A. Muzzin, A. B. Newman, S. H. Price, A. E. Shapley, M. Stefanon, K. A. Suess, P. van Dokkum, D. Weinberg, and D. R. Weisz, 2024, Accepted to ApJ, ([arXiv](#))
3. *The Heavy Metal Survey: The Evolution of Stellar Metallicities, Abundance Ratios, and Ages of Massive Quiescent Galaxies since  $z \sim 2$*   
**Beverage, A. G.**, M. Kriek, K. A. Suess, C. Conroy, S. H. Price, G. Barro, R. Bezanson, M. Franx, B. Lorenz, Y. Ma, L. A. Mowla, I. Pasha, P. van Dokkum, and D. R. Weisz, 2024, ApJ, 966, 234, DOI: [10.3847/1538-4357/ad372d](#)
2. *From Carbon to Cobalt: Chemical Compositions and Ages of  $z \sim 0.7$  Quiescent Galaxies*  
**Beverage, A. G.**, M. Kriek, C. Conroy, N. R. Sandford, R. Bezanson, M. Franx, A. van der Wel, and D. R. Weisz, 2023, ApJ, 948, 140, DOI: [10.3847/1538-4357/acc176](#)
1. *Elemental Abundances and Ages of  $z \sim 0.7$  Quiescent Galaxies on the Mass-Size Plane: Implication for Chemical Enrichment and Star Formation Quenching*  
**Beverage, A. G.**, M. Kriek, C. Conroy, R. Bezanson, M. Franx, and A. van der Wel, 2021, ApJ, 917 L1, DOI: [10.3847/2041-8213/ac12cd](#)

### Second- and Third-author:

4. *Modeling the Ages and Chemical Abundances of Elliptical Galaxies*  
Marcelina Gountanis, N., D. H. Weinberg, **A. G. Beverage**, N. R. Sandford, C. Conroy, and M. Kriek, submitted to ApJ, ([arXiv](#))
3. *Age and metal gradients in massive quiescent galaxies at  $0.6 < z < 1.0$ : Implications for quenching and assembly histories*  
Cheng, C. M., Kriek, M., **Beverage, A. G.**, van der Wel, A., Bezanson, R., D'Eugenio, F., Franx, M., Mancera Piña, P. E., Nersesian, A., Slob, M., Suess, K. A., van Dokkum, P. G., Wu, P.-F., Gallazzi, A., and Zibetti, S., MNRAS, 532, 3604, DOI: ([10.1093/mnras/stae1739](#))
2. *The JWST-SUSPENSE Ultradeep Spectroscopic Program: Survey Overview and Star-Formation Histories of Quiescent Galaxies at  $1 < z < 3$*   
Slob, M., M. Kriek, **A. G. Beverage**, K. A. Suess, G. Barro, R. Bezanson, G. Brammer, C. M. Cheng, C. Conroy, A. de Graaff, N. M. Förster Schreiber, M. Franx, B. Lorenz, P. E. Mancera Piña, D. Marchesini, A. Muzzin, A. B. Newman, S. H. Price, A. E. Shapley, M. Stefanon, P. van Dokkum, and D. R. Weisz, 2024, ApJ, 973, 131, DOI: ([10.3847/1538-4357/ad65ff](#))
1. *The Heavy Metal Survey: Star Formation Constraints and Dynamical Masses of 21 Massive Quiescent Galaxies at  $z = 1.3-2.3$*   
Kriek, M., **A. G. Beverage**, S. H. Price, K. A. Suess, G. Barro, R. S. Bezanson, C. Conroy, S. E. Cutler, M. Franx, J. Lin, B. Lorenz, Y. Ma, I. G. Momcheva, L. A. Mowla, I. Pasha, P. van Dokkum, and K. E. Whitaker, 2024, ApJ, 966, 1, DOI: [10.3847/1538-4357/ad2df9](#)