

Harvard-Smithsonian Center for Astrophysics
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EDUCATION

Institute for Astronomy, University of Hawai'i at Manoa
PhD in Astronomy, August 2014

University of California at Berkeley
Bachelor of Arts, Double Major in Physics and Astronomy, May 2005

RESEARCH EXPERIENCE

Clay Postdoctoral Fellow	Smithsonian Astrophysical Observatory Harvard-Smithsonian Center for Astrophysics	2014 - Present
SAO Predoctoral Fellow	Smithsonian Astrophysical Observatory Harvard-Smithsonian Center for Astrophysics	2012 - 2013
Research Assistant	Institute for Astronomy University of Hawai'i at Manoa	2008 - 2014
Junior Specialist	Space Sciences Laboratory University of California at Berkeley	2002 - 2008

TEACHING EXPERIENCE

ASTR 735 Course Instructor, "Research Techniques" Graduate Seminar, UH Manoa, Spring 2012
Science Olympics Astronomy Coach, Sponsored by Chandra X-ray Center, Fall 2011 - Spring 2012
ASTR 110 Teaching Assistant, "Survey of Astronomy", UH Manoa, Fall 2008 - Spring 2009
ASTR 110L Teaching Assistant, "Astronomy Laboratory", UH Manoa, Fall 2008 - Spring 2009

OBSERVING NIGHTS AWARDED

MMT 3 Nights using HECTOSPEC — 2016A (CO-I)
MMT 1 Night using HECTOSPEC — 2015C (PI)
MMT 3 Nights using HECTOSPEC — 2015A (CO-I)
Keck Telescope 2 Nights using DEIMOS — 2014A (PI)
Keck Telescope 2 Nights using DEIMOS — 2013B (PI)
Subaru Telescope 2 Nights using FMOS — 2013A (PI)
Subaru Telescope 4 Nights using FMOS — 2012A (PI)
Siding Spring Observatory, 5 Nights using WiFeS — 2013C (PI)
Siding Spring Observatory, 4 Nights using WiFeS — 2012C (PI)
UH 88" Telescope, 6 Nights using SNIFS — 2013A (CO-I)

AWARDS

Astronomical Society of the Pacific Robert J. Trumpler Award — October 2015
 University Research Council Student Excellence in Research Award (Doctoral Level) — May 2014
 Achievement Rewards for College Scientists (ARCS) Award — April 2013
 Smithsonian Astrophysical Observatory Predoctoral Fellowship — October 2012
 University Research Council Student Excellence in Research Award (Masters Level) — May 2010
 Friends of the Institute for Astronomy Research Award — March 2009
 Department of Energy Summer Fellowship — Summer 2005
 Research Experience for Undergraduates Fellowship — Summer 2004

INVITED TALKS

Illustris Science Meeting, Max Planck Institute for Astronomy — October 2018
 Colloquium, University of Texas at Austin — March 2018
 Giant Magellan Telescope Community Science Meeting — September 2017
 Star Formation, Metals and Feedback in Galaxies, EWASS 2017 — June 2017
 Clay Lecture, Harvard-Smithsonian Center for Astrophysics — May 2017
 High Energy Seminar, Harvard-Smithsonian Center for Astrophysics — January 2017
 In Situ View of Galaxy Formation, Rindberg Meeting — November 2016
 Colloquium, The Ohio State University — August 2016
 Chemical Evolution of Galaxies, MIAPP — August 2016
 Colloquium, University Observatory Munich — November 2015
 Bash Symposium, University of Texas at Austin — October 2015
 Arepofest-2, American Academy of Arts and Sciences — September 2014
 Metals in Tuscany, Abbazia di Spineto — June 2012

STUDENTS MENTORED

Po-Feng Wu (graduate student, University of Hawai'i at Manoa)
 Nicholas Baeza Hochmuth (undergraduate, University of Massachusetts at Lowell)
 Brandon Lazo (high school student, Chelsea High School, Chelsea Massachusetts)

FIRST AUTHOR PUBLICATIONS

19. *Stellar Velocity Dispersion: Linking Quiescent Galaxies to their Dark Matter Halos*, Zahid, H.J., Sohn, J., Geller, M.J.: 2018, *The Astrophysical Journal*, 859, 96
18. *Stellar Absorption Line Analysis of Local Star-Forming Galaxies: The Relation Between Stellar Mass, Metallicity, Dust Attenuation and Star Formation Rate*, Zahid, H.J., Kudritzki, R., Conroy, C., Andrews, B., Ho, I.T.: 2017, *The Astrophysical Journal*, 847, 18
17. *Velocity Dispersion, Size, Sérsic Index and D_n4000 : The Scaling of Stellar Mass with Dynamical Mass for Quiescent Galaxies*, Zahid, H.J., Geller, M.J.: 2017, *The Astrophysical Journal*, 841, 32
16. *The Scaling of Stellar Mass and Central Stellar Velocity Dispersion for Quiescent galaxies at $z < 0.7$* , Zahid, H.J., Geller, M.J., Fabricant, D.G., Hwang, H.S.: 2016, *The Astrophysical Journal*, 832, 203

15. *Compact E+A Galaxies as a Progenitor of Massive Compact Quiescent Galaxies at $0.2 < z < 0.8$* , Zahid, H.J., Baeza Hochmuth, N., Geller, M.J., Damjanov, I., Chillingarian, I., Sohn, J., Salmi, F., Hwang, H.S.: 2016, *The Astrophysical Journal*, 831, 146
14. *The Stellar Mass Fundamental Plane and Compact Quiescent Galaxies at $z < 0.6$* , Zahid, H.J., Damjanov, I., Geller, M.J., Hwang, H.S., Fabricant, D.G.: 2016, *The Astrophysical Journal*, 821, 101
13. *Agriculture, Population Growth, and Statistical Analysis of the Radiocarbon Record*, Zahid, H.J., Robinson, E.N., Kelly, R.L.: 2016, *Proceedings of the National Academy of Science of the United States of America*, 113, 4
12. *Quiescent Compact Galaxies at Intermediate Redshift in the COSMOS Field. II. The Fundamental Plane of Massive Galaxies*, Zahid, H.J., Damjanov, I., Geller, M., Chillingarian, I.: 2015, *The Astrophysical Journal*, 806, 122
11. *The FMOS-COSMOS Survey of Star-forming Galaxies at $z \sim 1.6$. II. The Mass-Metallicity Relation and the Dependence on Star Formation Rate and Dust Extinction*, Zahid, H.J., et al.: 2014, *The Astrophysical Journal*, 792, 75
10. *The Universal Relation of Galactic Chemical Evolution: The Origin of the Mass-Metallicity Relation*, Zahid, H.J., Dima, G., Kudritzki, R., Kewley, L., Geller, M., Hwang, H.S., Silverman, J., Kashino, D.: 2014, *The Astrophysical Journal*, 791, 130
9. *Empirical Constraints for the Magnitude and Composition of Galactic Winds*, Zahid, H.J., Torrey, P., Vogelsberger, M., Hernquist, L., Dave, R., Kewley, L.J.: 2014, *Astrophysics and Space Science*, 349, 873
8. *The Slow Flow Model of Dust Efflux in Local Star-Forming Galaxies*, Zahid, H.J., Torrey, P., Kudritzki, R.P., Kewley, L.J., Dave, R., Geller, M.J.: 2013, *Monthly Notices of the Royal Astronomical Society*, 436, 1852
7. *The Chemical Evolution of Star-Forming Galaxies Over the Last 11 Billion Years*, Zahid, H.J., Geller, M.J., Kewley, L.J., Hwang, H.S., Fabricant, D.G., Kurtz, M.J.: 2013, *The Astrophysical Journal Letters*, 771, 19
6. *The Observed Relation Between Stellar Mass, Dust Extinction and Star Formation Rate in Local Galaxies*, Zahid, H.J., Yates, R.J., Kewley, L.J., Kudritzki, R.P.: 2012, *The Astrophysical Journal*, 763, 92
5. *A Census of Oxygen in Star-Forming Galaxies: An Empirical Model Linking Metallicities, Star Formation rates and Outflows*, Zahid, H.J., Dima, G.I., Kewley, L.J., Erb, D.K., Davè, R.: 2012, *The Astrophysical Journal*, 757, 54
4. *The Metallicities of Low Stellar Mass Galaxies and the Scatter in the Mass-Metallicity Relation*, Zahid, H.J., Bresolin, F., Kewley, L.J., Coil, A.L., Davè, R.: 2012, *The Astrophysical Journal*, 750, 120
3. *Reexamination of the Radial Abundance Gradient Break in NGC 3359*, Zahid, H.J., Bresolin, F.: 2011, *The Astronomical Journal*, 141, 92
2. *The Mass-Metallicity and Luminosity-Metallicity Relation from DEEP2 at $z \sim 0.8$* , Zahid, H.J., Kewley, L.J., Bresolin, F.: 2011, *The Astrophysical Journal*, 730, 137

1. *Total Solar Irradiance Variation during Rapid Sunspot Growth*, Zahid, H.J., Hudson, H.S., Fröhlich, C.: 2004, *Solar Physics*, 222, 1

CONTRIBUTING AUTHOR PUBLICATIONS

31. *Quiescent Galaxy Size and Spectroscopic Evolution: Combining HSC Imaging and Hectospec Spectroscopy*, Damjanov, I., Zahid, H.J., Geller, M.J., Utsumi, Y., Sohn, J., Souchereau, H.: 2019, *The Astrophysical Journal*, In Press
30. *Spatiotemporal Dynamics of Prehistoric Population Growth: Radiocarbon 'Dates as Data' and Population Ecology Models*, Robinson, E., Zahid, H.J., Codding, B., Haas, R., Kelly, R.: 2019, *Journal of Archeological Science*, 101, 63
29. *A Complete Spectroscopic Census of Abell 2029: A Tale of Three Histories*, Sohn, J., Geller, M.J., Zahid, H.J., Fabricant, D.G.: 2018, *The Astrophysical Journal*, In Press
28. *A Complete Photometric Catalog of $r_p < 17.77$ SDSS Galaxies without Spectroscopy*, Lazo, B., Zahid, H.J., Sohn, J., Geller, M.J.: 2018, *Research Notes of the American Astronomical Society*, 2, 234
27. *hCOSMOS: A Dense Spectroscopic Survey of $r < 21.3$ Galaxies in the COSMOS Field*, Damjanov, I., Zahid, H.J., Geller, M.J., Fabricant, D., Hwang, H.S.: 2018, *The Astrophysical Journal Supplement*, 234, 21
26. *A Dependence of the Tidal Disruption Event Rate on Global Stellar Surface Mass Density and Stellar Velocity Dispersion*, Graur, O., French, D.K., Zahid, H.J., Guillochon, J., Mandel, K.S., Auchettl, K., Zabludoff, A.I., 2018, *The Astrophysical Journal*, 853, 39
25. *The Fine Line Between Normal and Starburst Galaxies*, Lee, N. et al.: 2017, *Monthly Notices of the Royal Astronomical Society*, 471, 2124
24. *The Velocity Dispersion Function for Quiescent Galaxies in the Local Universe*, Sohn, J., Zahid, H.J., Geller, M.J.: 2017, *The Astrophysical Journal*, 845, 73
23. *The Dependence of the Mass-Metallicity Relation on Large-Scale Environment*, Wu, P.F., Zahid, H.J., Hwang, H.S., Geller, M.J.: 2017, *Monthly Notices of the Royal Astronomical Society*, 468, 1881
22. *The Velocity Dispersion Function of Very Massive Galaxy Clusters: Abell 2029 and Coma*, Sohn, J., Geller, M.J., Zahid, H.J., Fabricant, D.G., Diaferio, A., Rines, K.J.: 2017, *The Astrophysical Journal Supplement*, 229, 20
21. *The FMOS-COSMOS Survey of Star-forming Galaxies at $z \sim 1.6$. IV. Excitation State and Chemical Enrichment of the Interstellar Medium*, Kashino, D. et al.: 2017, *The Astrophysical Journal*, 835, 88
20. *A Weak Lensing View of the Downsizing of Star-Forming Galaxies*, Utsumi, Y. et al.: 2016, *The Astrophysical Journal*, 833, 156
19. *Catalogs of Compact Groups of Galaxies from the Enhanced SDSS DR12*, Sohn, J., Geller, M., Hwang, H.S., Zahid, H.J., Lee, M.G.: 2016, *The Astrophysical Journal Supplement*, 225, 23
18. *SHELS: Complete Redshift Surveys of Two Widely Separated Fields*, Geller, M.J., Hwang, H.S., Dell'Antonio, I.P., Zahid, H.J., Kurtz, M.J., Fabricant, D.G.: 2016, *The Astrophysical Journal*

Supplement, 224, 11

17. *Catalogs of Compact Groups of Galaxies from the Enhanced SDSS DR12*, Sohn, J., Geller, M.J., Hwang, H.S., Zahid, H.J., Lee, M.G.: In Press, The Astrophysical Journal Supplement
16. *HectoMAP and Horizon Run 4: Dense Structures and Voids in the Real and Simulated Universe*, Hwang, H.S. et al.: 2016, The Astrophysical Journal, 818, 173
15. *The Environment of Massive Quiescent Compact Galaxies at $0.1 < z < 0.4$ in the COSMOS Field*, Damjanov, I., Zahid, H.J., Geller, M.J., Hwang, H.S., 2015, The Astrophysical Journal, 815, 104
14. *A Rise in the Ionizing Photons in Star-Forming Galaxies Over the Past 5 Billion Years*, Kewley, L.J., Zahid, H.J., Geller, M.J., Dopita, M.A., Hwang, H.S., Fabricant, D.: 2015, The Astrophysical Journal, 812, 20
13. *The Chemical Evolution of Local Star-Forming Galaxies: Radial Profiles of ISM Metallicity, Gas Mass, and Stellar Mass and Constraints on Galactic Accretion and Winds*, Kudritzki, R.P., Ho, I.T., Schrubba, A., Berkert, A., Zahid, H.J., Bresolin, F., Dima, G.I.: 2015, Monthly Notices of the Royal Astronomical Society, 450, 342
12. *Rest-frame Optical Emission Lines in Far-infrared-selected Galaxies at $z < 1.7$ from the FMOS-COSMOS Survey*, Kartaltepe, J.S. et al.: 2015, The Astrophysical Journal Letters, 806, 6
11. *Metallicity Gradients in Local Field Star-Forming Galaxies: Insights on Inflows, Outflows, and the Coevolution of Gas, Stars and Metals*, Ho, I.-T., Kudritzki, R.P., Kewley, L.J., Zahid, H.J., Dopita, M.A., Bresolin, F., Rupke, D.S.N.: 2015, Monthly Notices of the Royal Astronomical Society, 448, 2030
10. *Quiescent Compact Galaxies at Intermediate Redshift in the COSMOS Field. The Number Density*, Damjanov, I., Geller, M., Zahid, H., Hwang, H.S.: 2015, The Astrophysical Journal, 806, 14
9. *A Turnover in the Galaxy Main Sequence of Star Formation at $M_* \sim 10^{10} M_\odot$ for Redshifts $z < 1.3$* , Lee, N., et al.: 2015, The Astrophysical Journal, Volume 801, 80
8. *Ages of Type Ia Supernovae Over Cosmic Time*, Childress, M.J., Wolf, C., Zahid, H.J.: 2014, Monthly Notices of the Royal Astronomical Society, 445, 1898
7. *Comparing Dense Galaxy Cluster Redshift Surveys with Weak-lensing Maps*, Hwang, H.S., Geller, M.J., Diaferio, A., Rines, K.J., Zahid, H.J.: 2014, The Astrophysical Journal, 797, 106
6. *SHELS: A Complete Galaxy Redshift Survey with $R < 20.6$* , Geller, M., Hwang, H.S., Fabricant, D., Kurtz, M., Dell'Antonio, I., Zahid, H.J.: 2014, The Astrophysical Journal Supplement, 213, 35
5. *The FMOS-COSMOS Survey of Star-Forming Galaxies at $z \sim 1.6$ I. $H\alpha$ -Based Star Formation Rates and Dust Extinction*, Kashino, D., et al.: 2013, The Astrophysical Journal Letters, 777, 8
4. *Eliminating Error in the Chemical Abundance Scale for Extragalactic H II Regions*, López-Sánchez, Á.R., Dopita, M.A., Kewley, L.J., Zahid, H.J., Nicholls, D.C., Scharwächter, J., Asiri, H.M.: 2012, Monthly Notices of the Royal Astronomical Society, 426, 2630
3. *The Host Galaxies of Gamma-Ray Bursts II: A Mass-Metallicity Relation for Long-Duration Gamma-Ray Burst Host Galaxies*, Levesque, E.M., Kewley, L.J., Berger, E., Zahid, H.J.: 2010, The Astronomical Journal, 140, 1557

2. *Metallicity Gradients and Gas Flows in Galaxy Pairs*, Kewley, L.J., Rupke, D., Zahid, H.J., Geller, M.J., Barton, E.J.: 2010, *The Astrophysical Journal Letters*, 721, 48

1. *A Large Excess in Apparent Solar Oblateness Due to Surface Magnetism*, Fivian, M.D., Hudson, H.S., Lin, R.P., Zahid, H.J.: 2008, *Science*, 322, 560

REFERENCES

Dr. Margaret Geller	Smithsonian Astrophysical Observatory	mgeller@cfa.harvard.edu
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