

CURRICULUM VITAE

MARK REUBEN KRUMHOLZ

DEPARTMENT OF ASTRONOMY AND ASTROPHYSICS, UNIVERSITY OF CALIFORNIA, SANTA CRUZ
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PROFESSIONAL APPOINTMENTS

2009 - present	Alfred P. Sloan Research Fellow
2008 - present	University of California Santa Cruz, Astronomy and Astrophysics Department <i>Assistant Professor</i>
2005 - 2008	Princeton University, Astrophysics Department <i>Hubble, Spitzer, and Council on Science and Technology Postdoctoral Fellow</i>

EDUCATION

Aug. 2005	University of California, Berkeley <i>Doctor of Philosophy, Physics</i>
May 2000	University of California, Berkeley <i>Master of Arts, Physics</i>
June 1998	Princeton University <i>Bachelor of Arts, Physics with Certificate in Applied and Computational Mathematics, summa cum laude</i>

AWARDS AND HONORS

2010	National Science Foundation CAREER award
2009	Alfred P. Sloan Research Fellowship
2007	Participant in Kavli / National Academy of Sciences Japanese-American Frontiers of Science Symposium
2006	Offered membership in the Princeton University Society of Fellows (declined)
2005	Hubble Postdoctoral Fellowship
2005	NSF Postdoctoral Fellowship (declined)
2005	Lyman Spitzer, Jr. Postdoctoral Fellowship
2005	Council on Science and Technology Fellowship (Princeton University)
2005	Mary Elizabeth Uhl Dissertation Prize (UC Berkeley)
2001	NASA Graduate Student Researcher Program Fellowship
2000	Hertz Foundation Fellowship Finalist
1999	Outstanding Graduate Student Instructor Award (UC Berkeley)
1998	NSF Graduate Fellowship
1998	Kusaka Memorial Award (Princeton University)
1998	Elected to ΦBK and $\Sigma\Xi$

REFEREED PUBLICATIONS

67. Dukes, D., & **Krumholz, M. R.** 2011, “Was the Sun Born in a Massive Cluster?”, submitted to *The Astrophysical Journal*.
66. Narayanan, D., **Krumholz, M. R.**, Ostriker, E. C., & Hernquist, L. 2011, “A General Model for the CO-H₂ Conversion Factor in Galaxies with Applications to the Star Formation Law”, submitted to *Monthly Notices of the Royal Astronomical Society*, arXiv:1110.3791.
65. **Krumholz, M. R.**, & Dekel, A. 2011, “Metallicity-Dependent Quenching of Star Formation at High Redshift in Small Galaxies”, submitted to *The Astrophysical Journal*, arXiv:1106.0301.
64. Kuhlen, M., **Krumholz, M. R.**, Madau, P., Smith, B., & Wise, J. 2011, “Dwarf Galaxy Formation with H₂-Regulated Star Formation”, submitted to *The Astrophysical Journal*, arXiv:1105.2376.
63. Cunningham, A. J., McKee, C. F., Klein, R. I., **Krumholz, M. R.**, & Teyssier, R. 2011, “Magnetized Bondi Accretion”, *The Astrophysical Journal*, in press.
62. da Silva, R. L., Fumagalli, M., & **Krumholz, M. R.** 2011, “SLUG - Stochastically Lighting Up Galaxies I: Methods and Validating Tests”, *The Astrophysical Journal*, in press, arXiv:1106.3072.
61. **Krumholz, M. R.**, Dekel, A., & McKee, C. F. 2011, “A Universal, Local Star Formation Law in Galactic Clouds, Nearby Galaxies, High-Redshift Disks, and Starbursts”, *Astrophysical Journal*, in press, arXiv:1109.4150.
60. Gendele, L., & **Krumholz, M. R.** 2011, “Evolution of Blister-Type H II Regions in a Magnetized Medium”, *The Astrophysical Journal*, in press, arXiv:1110.4645.
59. **Krumholz, M. R.** 2011, “On the Origin of Stellar Masses”, *The Astrophysical Journal*, in press, arXiv:1109.1564.
58. Narayanan, D., **Krumholz, M. R.**, Ostriker, E. C., & Hernquist, L. 2011, “The CO-H₂ Conversion Factor in Disc Galaxies and Mergers”, *Monthly Notices of the Royal Astronomical Society*, in press, arXiv:1104.4118.
57. Fumagalli, M., da Silva, R. L., & **Krumholz, M. R.** 2011, “Stochastic Star Formation and a (Nearly) Uniform Stellar Initial Mass Function”, *Astrophysical Journal Letters*, 741, L26.
56. Cunningham, A. J., Klein, R. I., McKee, C. F., & **Krumholz, M. R.** 2011, “Radiation-Hydrodynamic Simulations of Massive Star Formation with Protostellar Outflows”, *The Astrophysical Journal*, 740, 107.
55. **Krumholz, M. R.**, Klein, R. I., & McKee, C. F. 2011, “Radiation-Hydrodynamic Simulations of the Formation of Massive Star Clusters I. Implications for the Origin of the Initial Mass Function”, *The Astrophysical Journal*, 740, 74.
54. Lin, M.-K., **Krumholz, M. R.**, & Kratter, K. M. 2011, “Spin Down of Protostars Through Gravitational Torques”, *Monthly Notices of the Royal Astronomical Society*, 416, 580.
53. Hosokawa, T., Offner, S. S. R., & **Krumholz, M. R.** 2011, “On the Reliability of Stellar Ages and Age Spreads Inferred from Pre-Main Sequence Evolutionary Models”, *The Astrophysical Journal*, 738, 140.
52. Goldbaum, N. J., **Krumholz, M. R.**, Matzner, C. D., & McKee, C. F. 2010, “The Global Evolution of Giant Molecular Clouds II: The Role of Accretion”, *The Astrophysical Journal*, 738, 101.
51. Saintonge, A., and 23 other authors including **Krumholz, M. R.** 2011, “COLD GASS, an IRAM Legacy Survey of Molecular Gas in Massive Galaxies: II. The Non-Universality of the Molecular Gas Depletion Timescale”, *Monthly Notices of the Royal Astronomical Society*, 415, 61.

50. Saintonge, A., and 22 other authors including **Krumholz, M. R.** “COLD GASS, an IRAM Legacy Survey of Molecular Gas in Massive Galaxies: I. Relations between H_2 , $H\ I$, Stellar Content and Structural Properties”, *Monthly Notices of the Royal Astronomical Society*, 415, 32
49. Myers, A. T., **Krumholz, M. R.**, Klein, R. I., & McKee, C. F. 2011, “Metallicity and the Universality of the IMF”, *The Astrophysical Journal*, 735, 49.
48. **Krumholz, M. R.** 2011, “Star Formation with Adaptive Mesh Refinement Radiation Hydrodynamics” (refereed review), in “IAU Symposium 270: Computational Star Formation”, eds. B. Elmegreen, J. Girart, & V. Trimble, (Cambridge: Cambridge University Press), 270, 187.
47. Lopez, L. A., **Krumholz, M. R.**, Bolatto, A. D., Prochaska, J. X., & Ramirez-Ruiz, E. 2011, “What Drives the Expansion of Giant $H\ II$ Regions?: A Study of Stellar Feedback in 30 Doradus”, *Astrophysical Journal*, 731, 91.
46. **Krumholz, M. R.**, Leroy, A. K., & McKee, C. F. 2010, “What Phase of the Interstellar Medium Correlates with the Star Formation Rate?”, *The Astrophysical Journal*, 731, 25.
45. Jacquet, E., & **Krumholz, M. R.** 2011, “Radiative Rayleigh-Taylor Instabilities”, *Astrophysical Journal*, 730, 116.
44. Hennebelle, P., Commerçon, B., Joos, M., Klessen, R. S., **Krumholz, M. R.**, Tan, J. C., & Teyssier, R. 2011, “Collapse, Outflows, and Fragmentation of Massive, Turbulent, and Magnetized Prestellar Barotropic Cores”, *Astronomy & Astrophysics*, 528, 72.
43. **Krumholz, M. R.**, & Gnedin, N. Y. 2011, “A Comparison of Methods for Determining the Molecular Content of Model Galaxies”, *Astrophysical Journal*, 729, 36.
42. Klessen, R., & **Krumholz, M. R.**, & Heitsch, F. 2011, “Numerical Star-Formation Studies – A Status Report”, *Advanced Science Letters* (invited review), 4, 258.
41. Fu, J., Qi, G., Kauffman, G., & **Krumholz, M. R.** 2010, “The Atomic to Molecular Transition and its Relation to the Scaling Properties of Galaxy Disks in the Local Universe”, *Monthly Notices of the Royal Astronomical Society*, 409, 515.
40. Offner, S. S. R., Kratter, K. M., Matzner, C. D., **Krumholz, M. R.**, & Klein, R. I. 2010, “The Formation of Low-Mass Binary Star Systems Via Turbulent Fragmentation”, *Astrophysical Journal*, 725, 1485.
39. **Krumholz, M. R.**, & Burkert, A. 2010, “Dynamics and Evolution of Gravitational Instability-Dominated Disks”, *Astrophysical Journal*, 724, 895.
38. Fumagalli, M., **Krumholz, M. R.**, & Hunt, L. K. 2010, “Testing Models for Molecular Gas Formation in Galaxies: Hydrostatic Pressure or Dust Shielding?”, *Astrophysical Journal*, 722, 919.
37. Bland-Hawthorn, J., Karlsson, T., Sharma, S., **Krumholz, M. R.**, & Silk, J. 2010, “Chemical Signatures of the First Star Clusters”, *Astrophysical Journal*, 721, 582.
36. **Krumholz, M. R.**, & Dekel, A. 2010, “Survival of Star-Forming Giant Clumps in High-Redshift Galaxies”, *Monthly Notices of the Royal Astronomical Society*, 406, 112.
35. **Krumholz, M. R.**, Cunningham, A. J., Klein, R. I., & McKee, C. F. 2010, “Radiation Feedback, Fragmentation, and the Environmental Dependence of the Initial Mass Function”, *Astrophysical Journal*, 713, 1120.
34. Bland-Hawthorn, J., **Krumholz, M. R.**, & Freeman, K. 2010, “The Long-Term Evolution of the Galactic Disk Traced by Dissolving Star Clusters”, *Astrophysical Journal*, 713, 166.
33. Fall, S. M., **Krumholz, M. R.**, & Matzner, C. D., 2010, “Stellar Feedback in Molecular Clouds and its Influence on the Mass Function of Young Star Clusters”, *Astrophysical Journal Letters*, 710, L142.

32. McKee, C. F., & **Krumholz, M. R.**, 2010, “The Atomic to Molecular Transition in Galaxies. III. A New Method of Determining the Molecular Content of Primordial and Dusty Clouds”, *Astrophysical Journal*, 709, 308.
31. Kratter, K. M., Matzner, C. D., **Krumholz, M. R.**, & Klein, R. I. 2010, “On the Role of Disks in the Formation of Stellar Systems: A Numerical Parameter Study of Rapid Accretion”, *Astrophysical Journal*, 708, 1585.
30. Offner, S. S. R., Hansen, C., & **Krumholz, M. R.** 2009, “Stellar Kinematics of Young Clusters in Turbulent Hydrodynamic Simulations”, *Astrophysical Journal Letters*, 704, 124.
29. **Krumholz, M. R.**, & Matzner, C. D. 2009, “The Dynamics of Radiation Pressure-Dominated H II Regions”, *Astrophysical Journal*, 703, 1352.
28. Offner, S. S. R., Klein, R. I., McKee, C. F., & **Krumholz, M. R.** 2009, “The Effects of Radiative Transfer on Low-Mass Star Formation”, *Astrophysical Journal*, 703, 131.
27. **Krumholz, M. R.**, Ellison, S. L., Prochaska, J. X., & Tumlinson, J. 2009, “On the Absence of High Metallicity-High Column Density Damped Lyman Alpha Systems: Molecule Formation in a Two-Phase Interstellar Medium”, *Astrophysical Journal Letters*, 701, 12.
26. **Krumholz, M. R.**, McKee, C. F., & Tumlinson, J. 2009, “The Star Formation Law in Atomic and Molecular Gas”, *Astrophysical Journal*, 699, 850.
25. Fumagalli, M., **Krumholz, M. R.**, Prochaska, J. X., Gavazzi, G., & Boselli, A. 2009, “Detection of Molecular Hydrogen Deficiency in H I-Poor Galaxies and Implications for their Star Formation Activity”, *Astrophysical Journal*, 697, 1811.
24. Offner, S. S. R., & **Krumholz, M. R.** 2009, “The Shapes of Molecular Cloud Cores in Simulations and Observation”, *Astrophysical Journal*, 693, 914.
23. **Krumholz, M. R.**, McKee, C. F., & Tumlinson, J. 2009, “The Atomic to Molecular Transition in Galaxies. II: HI and H₂ Column Densities”, *Astrophysical Journal*, 693, 216.
22. **Krumholz, M. R.**, Klein, R. I., McKee, C. F., Offner, S. S. R., & Cunningham, A. J. 2009, “The Formation of Massive Star Systems by Accretion”, *Science*, 323, 754.
21. **Krumholz, M. R.**, McKee, C. F., & Tumlinson, J. 2008, “The Atomic to Molecular Transition in Galaxies. I: An Analytic Approximation for Photodissociation Fronts in Finite Clouds”, *Astrophysical Journal*, 689, 865.
20. Offner, S. S. R., **Krumholz, M. R.**, Klein, R. I., & McKee, C. F. 2008, “The Dynamics of Molecular Cloud Cores in Driven and Undriven Turbulence Environments”, *Astronomical Journal*, 136, 404.
19. **Krumholz, M. R.** & McKee, C. F. 2008, “A Minimum Column Density of 1 g cm⁻² for Massive Star Formation”, *Nature*, 451, 1082.
18. Kratter, K. M., Matzner, C. D., & **Krumholz, M. R.** 2008, “Global Models for the Evolution of Embedded, Accreting Protostellar Disks”, *Astrophysical Journal*, 681, 375.
17. **Krumholz, M. R.**, Stone, J. M & Gardiner, T. A. 2007, “Magnetohydrodynamic Evolution of HII Regions: Simulation Methodology, Convergence Tests, and Uniform Media”, *Astrophysical Journal*, 671, 518.
16. **Krumholz, M. R.**, & Thompson, T. A. 2007, “The Relationship Between Molecular Gas Tracers and Kennicutt-Schmidt Laws”, *Astrophysical Journal*, 669, 289.
15. **Krumholz, M. R.**, Klein, R. I., McKee, C. F., & Bolstad, J. 2007, “Equations and Algorithms for Mixed-Frame Flux Limited Diffusion Radiation Hydrodynamics”, *Astrophysical Journal*, 667, 626.

14. **Krumholz, M. R.**, Klein, R. I., & McKee, C. F. 2007, “Molecular Line Emission from Massive Protostellar Disks: Predictions for ALMA and the EVLA”, *Astrophysical Journal*, 665, 478.
13. **Krumholz, M. R.** & Thompson, T. A. 2007, “Mass Transfer in Close, Rapidly Accreting Protobinaries: An Origin for Massive Twins?”, *Astrophysical Journal*, 661, 1034.
12. **Krumholz, M. R.**, Klein, R. I., & McKee, C. F. 2007, “Simulations of Collapse and Fragmentation in Massive Protostellar Cores”, *Astrophysical Journal*, 656, 959.
11. **Krumholz, M. R.**, & Tan, J. C. 2007, “Slow Star Formation in Dense Gas: Evidence and Implications”, *Astrophysical Journal*, 654, 304.
10. **Krumholz, M. R.**, Matzner, C. D., & McKee, C. F. 2006, “The Global Evolution of Giant Molecular Clouds. I: Model Formulation and Quasi-Equilibrium Behavior”, *Astrophysical Journal*, 653, 361.
9. Tan, J. C., **Krumholz, M. R.**, & McKee, C. F. 2006, “Equilibrium Star Cluster Formation”, *Astrophysical Journal Letters*, 641, 121.
8. **Krumholz, M. R.** 2006, “Radiation Feedback and Fragmentation in Massive Protostellar Cores”, *Astrophysical Journal Letters*, 641, 45.
7. **Krumholz, M. R.**, McKee, C. F., & Klein, R. I. 2006, “Bondi-Hoyle Accretion in a Turbulent Medium”, *Astrophysical Journal*, 638, 369.
6. **Krumholz, M. R.**, McKee, C. F., & Klein, R. I. 2005, “The Formation of Stars by Gravitational Collapse Rather Than Competitive Accretion”, *Nature*, 438, 332.
5. **Krumholz, M. R.**, & McKee, C. F. 2005, “A General Theory of Turbulence-Regulated Star Formation, From Spirals to Ultraluminous Infrared Galaxies”, *Astrophysical Journal*, 630, 250.
4. **Krumholz, M. R.**, McKee, C. F., & Klein, R. I. 2005, “How Protostellar Outflows Help Massive Stars Form”, *Astrophysical Journal Letters*, 618, 33.
3. **Krumholz, M. R.**, McKee, C. F., & Klein, R. I. 2005, “Bondi Accretion in the Presence of Vorticity”, *Astrophysical Journal*, 618, 757.
2. **Krumholz, M. R.**, McKee, C. F., & Klein, R. I. 2004, “Embedding Lagrangian Sink Particles in Eulerian Grids”, *Astrophysical Journal*, 611, 399.
1. **Krumholz, M. R.**, Thorsett, S. E., & Harrison, F. A. 1998, “Gamma-Ray Bursts and the Cosmic Star Formation Rate,” *Astrophysical Journal Letters*, 506, 81.

INVITED CONFERENCE PROCEEDINGS (NON-REFEREED)

7. **Krumholz, M. R.** 2011, “Star Formation in Molecular Clouds”, in “XVth Special Courses at the National Observatory of Rio de Janeiro”, eds. E. Telles, R. Dupke, & D. Lazzaro, AIP Conference Proceedings, (Melville, NY: AIP), 1386, 9.
6. **Krumholz, M. R.** 2010, “How Radiation Feedback Affects Fragmentation and the IMF”, in “Up2010: Have Observations Revealed a Variable Upper End of the Initial Mass Function?”, eds. M. Treyer, T. Wyder, D. Neill, M. Seibert, & J. Lee, ASP Conference Series, (San Francisco: ASP), 440, 91.
5. **Krumholz, M. R.** & Bonnell, I. A. 2009, “Models for the Formation of Massive Stars”, in “Structure Formation in the Universe”, in “Structure Formation in the Universe”, ed. G. Chabrier, (Cambridge: Cambridge University Press), 288.
4. **Krumholz, M. R.** 2008, “From Massive Cores to Massive Stars”, in “Pathways Through an Eclectic Universe: A Conference Celebrating John Beckman’s 40 Years of Active Research in Astrophysics”, eds. J. Knapen, T. Mahoney, & A. Vazdekis, ASP Conference Series, (San Francisco: ASP), 390, 16.

3. **Krumholz, M. R.** 2008, “Collapse, Fragmentation, and Accretion in Massive Cores”, in “Massive Star Formation: Observations Confront Theory”, eds. H. Beuther, H. Linz, and T. Henning, ASP Conference Series, (San Francisco: ASP), 387, 200.
2. **Krumholz, M. R.** 2006, “High Mass Star Formation by Gravitational Collapse of Massive Cores”, in “Proceedings of the 2006 Space Telescope Science Institute May Symposium: Massive Star Formation: From Pop III and GRBs to the Milky Way”, in press, astro-ph/0607429.
1. **Krumholz, M. R.** 2006, “Massive Star Formation: A Tale of Two Theories”, in “New Horizons in Astronomy, Proceedings of the 2005 Frank N. Bash Symposium”, eds. S. Kannappan, S. Redfield, N. Drory, J. Kessler-Silacci, & M. Landriau, ASP Conference Series, (San Francisco: ASP), 352, 31.

CONTRIBUTED CONFERENCE PROCEEDINGS (NON-REFEREED)

8. Fumagalli, M., & da Silva, R., **Krumholz, M. R.**, & Bigiel, F. 2010, “SLUG: A New Way to Stochastically Light Up Galaxies”, in “Up2010: Have Observations Revealed a Variable Upper End of the Initial Mass Function?”, eds. M. Treyer, T. Wyder, D. Neill, M. Seibert, & J. Lee, ASP Conference Series, (San Francisco: ASP), 440, 155.
7. Kratter, K. M., Matzner, C. D., & **Krumholz, M. R.** 2008, “Embedded, Accreting Disks in Massive Star Formation”, in “Massive Star Formation: Observations Confront Theory”, eds. H. Beuther, H. Linz, and T. Henning, ASP Conference Series, (San Francisco: ASP), 387, 262.
6. **Krumholz, M. R.** 2007, “Turbulence, Feedback, and Slow Star Formation”, in “IAU Symposium 237: Triggered Star Formation in a Turbulent ISM”, eds. B. G. Elmegreen & J. Palous, IAU Symposium Series, (Cambridge: Cambridge University Press), 237, 378.
5. **Krumholz, M. R.**, Klein, R. I., & McKee, C. F. 2005, “Radiation Pressure in Massive Star Formation”, in “IAU Symposium 227: Massive Star Birth: A Crossroads of Astrophysics”, eds. R. Cesaroni, E. Churchwell, M. Felli, & C. M. Walmsley, IAU Symposium Series, (Cambridge: Cambridge University Press), 227, 231.
4. **Krumholz, M. R.**, McKee, C. F., & Klein, R. I. 2004, “Embedding Lagrangian Sink Particles in Eulerian Grids”, in “Star Formation in the Interstellar Medium, a workshop in honor of David Hollenbach, Chris McKee, and Frank Shu”, eds. F. C. Adams, D. Johnstone, D. N. C. Lin, & E. C. Ostriker, ASP Conference Series, (San Francisco: ASP), 323, 401.
3. **Krumholz, M. R.**, Fisher, R. T., Klein, R. I., & McKee, C. F. 2003, “Realistic Initial Conditions for Star Formation Simulations”, *Revista Mexicana de Astronomía y Astrofísica*, 15, 138.
2. Klein, R. I., Fisher, R. T., **Krumholz, M. R.**, & McKee, C. F. 2003, “Recent Advances in Collapse and Fragmentation of Turbulent Molecular Cloud Cores”, *Revista Mexicana de Astronomía y Astrofísica*, 15, 92.
1. Shrauner, J. A., Stairs, I. H., Dewey, R. J., **Krumholz, M. R.**, Taylor, H. E., Taylor, J. H., & Thorsett, S. E. 1996, “Mark IV: A Phase Coherent Observing System for Pulsars,” in “IAU Symposium 160: Pulsars: Problems and Progress”, eds. S. Johnson, M. A. Walker, & M. Bailes, ASP Conference Series, (San Francisco: ASP), 23.

PUBLICATIONS IN THE POPULAR PRESS

3. **Krumholz, M. R.** Review of *Parallax*, by Alan Hirshfeld, *San Francisco Bay Guardian*, Sep. 1, 2001.
2. **Krumholz, M. R.** Review of *The Neptune File*, by Tom Standage, *San Francisco Bay Guardian*, Apr. 1, 2001.
1. **Krumholz, M. R.** “Astronomy and its Discontents” (feature article), *San Francisco Bay Guardian*, Mar. 7, 2001.

EXTERNAL SUPPORT

2010 - 2015	Title: "Toward a Predictive Theory of Star Formation" Agency: NSF Program: CAREER award Funding level: \$663,347 Role: Principal investigator
2012 - 2015	Title: "The Effect of Feedback on the Formation of High Mass Stars: From High Mass Cores to Massive Star Clusters" Agency: NASA Program: Astrophysics Theory and Fundamental Physics Funding level: \$608,164 (UCSC portion \$92,214) Role: Co-investigator (PI: Richard Klein)
2011 - 2013	Title: "Probing X-Ray Emission in H II Regions with <i>Chandra</i> " Agency: NASA Program: <i>Chandra</i> Telescope Funding level: \$60,800 Role: Co-investigator (PI: Laura Lopez)
2009 - 2013	Agency: Alfred P. Sloan Foundation Program: Sloan Research Fellowship Funding level: \$50,000 Role: Principal investigator
2009 - 2012	Title: "The Formation of High Mass Stars and their Feedback Effects" Agency: NASA Program: Astrophysics Theory and Fundamental Physics Funding level: \$85,979 (UCSC portion only) Role: Co-investigator (PI: Richard Klein)
2008 - 2011	Title: "The Hidden Lives of Massive Protostars" Agency: NSF Program: Astronomy & Astrophysics Research Funding level: \$425,514 Role: Principal investigator
2008 - 2010	Title: "Simulating Star Formation in Space and Time" Agency: NASA / Jet Propulsion Laboratory Program: Spitzer Cycle 5 Theoretical Research Funding level: \$125,000 Role: Principal investigator

OBSERVATIONAL AND COMPUTING SUPPORT (SELECTED)

2011	NASA Advanced Computing, 11.2 MCPU-hours (PI: Richard Klein)
2011	<i>Chandra</i> Space Telescope, 105 ks, co-investigator (PI: Laura Lopez)
2011	<i>Hubble</i> Space Telescope, 56 orbits, co-investigator (PI: Julia Roman-Duval)
2010 - 2011	NASA Advanced Computing, 1.2 MCPU-hours, principal investigator
2009 - 2012	NSF TeraGrid (computing), 5.8 MCPU-hours, co-investigator (PI: Richard Klein)
2009 - 2010	IRAM 30m, 92 hours, co-investigator (PI: Guinevere Kauffman)
2007 - 2008	XMM, 84 ks, co-investigator (PI: Junfeng Wang)
2006 - 2009	NSF LRAC (computing), 1.2 MCPU-hours, co-investigator (PI: Richard Klein)

PROFESSIONAL SERVICE

- 2011 - present Editorial Board Member for *Scientific Reports*
- 2010 - present Scientific organizing committee service:
“From Stars to Galaxies” (Gainesville, FL, April 2010)
“IAU Symposium 270: Computational Star Formation” (Barcelona, May 2010)
“The Early Phase of Star Formation” (Ringberg, Germany, June 2010)
“International Summer Institute for Modeling in Astrophysics” (Santa Cruz, CA, July 2010)
“AntFest: A Conference in Honor of the 66th Birthday of Anthony Whitworth” (Crete, June 2012)
“Origins of Stars and their Planetary Systems” (Ontario, Canada, June 2012)
“Star Formation in Dwarf Galaxies” (Lowell Observatory, AZ, June 2012)
“IAU Symposium 292: Molecular Gas, Dust, and Star Formation in Galaxies” (Beijing, August 2012)
- 2010 Invited lecturer for the XVth Cycle of Special Courses at the National Observatory of Brazil
- 2010 Lead organizer for Aspen Center for Physics Meeting “Star Formation in Galaxies: From Recipes to Real Physics”

COMMUNITY SERVICE

- Jan. 2009 - present Founder, director, and instructor
UC Santa Cruz Project for Inmate Education
- PIE is a program I founded in which UC Santa Cruz faculty, staff, and students teach at the Santa Cruz main jail.
 - PIE began teaching in spring / summer 2009.
- Dec. 2005 - July 2008 Founder, director, and instructor
Princeton Prison Teaching Initiative
- PTI is a volunteer program I founded through which Princeton University faculty, staff, and students teach college classes to New Jersey prison inmates.
 - PTI works in conjunction with a program run by Mercer County Community College, and its courses are accredited through MCCC.
 - Hundreds of inmates at four prisons have now participated in PTI courses.
 - PTI is now administered by the Pace Center for Civic Engagement at Princeton University
 - For more on PTI, see www.princeton.edu/pace/home/programs/pti/
- Sep. 1998 - Aug. 2005 Advisory board member, director of science instruction, instructor
Prison University Project
- PUP is a non-profit (501(c)(3)) organization that provides free, accredited community college education to inmates at San Quentin State Prison, in San Quentin, CA.
 - As a member of the advisory board (Aug. 2002 - Aug. 2005), I helped set policy for PUP.
 - As director of math and science instruction (June 2000 - Aug. 2005), I helped decide what courses would be taught, recruited instructors, and helped write syllabuses.
 - As an instructor (Sep. 1998 - Aug. 2004) I taught courses including college algebra, introduction to astronomy, introduction to physics, and topics in mathematics.
 - For more on PUP, see www.prisonuniversityproject.org.