

REBEKAH ILENE DAWSON — CURRICULUM VITAE

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CURRENT POSITION

Pennsylvania State University, State College, Pennsylvania, USA

Assistant Professor, Pennsylvania State University Department of Astronomy & Astrophysics,
01/2016-present

PREVIOUS POSITIONS

Miller Institute for Basic Research in Science, Berkeley, California, USA

Miller Research Fellow, University of California Berkeley Department of Astronomy,
09/2013-12/2015

EDUCATION

Harvard University, Cambridge, Massachusetts, USA

Ph.D. Astronomy & Astrophysics (2013), **A.M.** Astronomy (2011)

Advisor: Ruth Murray-Clay, Thesis title: *On the Migratory Behavior of Planetary Systems*

Wellesley College, Wellesley, MA, USA

B.A. Astrophysics (2009), summa cum laude; departmental honors in Astrophysics

SELECTED HONORS AND AWARDS

- Alfred P. Sloan Research Fellowship in Physics (2018)
- Bok Prize, Harvard University Department of Astronomy (2018)
- American Astronomical Society Annie Jump Cannon Award (2017; awarded to one early career woman astronomer annually)
- Fireman Award, Harvard University Department of Astronomy (2013)
- Block Award, Aspen Center for Physics (2013)
- American Astronomical Society Rodger Doxsey Travel Prize (2013)
- National Science Foundation Graduate Research Fellowship (2010-2013)
- WE-Heraeus-Seminar on Extrasolar Planets, poster prize honorable mention (2011)
- American Astronomical Society Division on Dynamical Astronomy, student stipend award (2011)
- Certificate of Distinction in Teaching, Harvard University (2011)
- American Astronomical Society, Chambliss Student Astronomy Achievement (2010)
- Charles Duncan Prize in Astronomy, Wellesley College (2009)
- Phyllis Flemming Prize in Physics, Wellesley College (2009)
- Pi Beta Kappa national academic honors society (2009)
- Sigma Xi national scientific research honors society (2009)
- Summa cum laude honors/Durant Scholar, Wellesley College (2009)
- Schiff Fellowship, Wellesley College (2008-2009)
- Barry M. Goldwater Scholarship (national science scholarship) (2007-2009)
- Mary Gross Prize for Academic Excellence, Wellesley College (2007)

PUBLICATIONS

First author:

1. *Origins of Hot Jupiters* (invited, refereed review), **Dawson, R.** and Johnson, J., Annual Reviews in Astronomy & Astrophysics, in press
2. *Tightly-Packed Planetary Systems* (invited, refereed review), **Dawson, R.** 2017, Springer Major References, The Handbook of Exoplanets, 18 pp
3. *Correlations between compositions and orbits established by the giant impact era of planet formation*, **Dawson, R.**, Lee, E., & Chiang, E. 2016, ApJ, 822, 54
4. *A metallicity recipe for rocky planets*, **Dawson, R.**, Chiang, E., & Lee, E. 2015, MNRAS, 453, 1571
5. *A paucity of proto-hot Jupiters on supereccentric orbits*, **Dawson, R.**, Murray-Clay, R.A., & Johnson, J.A. 2015, Astrophysical Journal, 798, 66
6. *A Class of Warm Jupiters with Mutually Inclined, Apsidally Misaligned, Close Friends*, **Dawson, R.** & Chiang, E. 2014, Science, 346, 6206, pp. 212-216
7. *On the tidal origin of hot Jupiter stellar obliquity trends*, **Dawson, R.**, 2014, Astrophysical Journal Letters, 790, L31
8. *Large eccentricity, low mutual inclination: the three-dimensional architecture of a hierarchical system of giant planets*, **Dawson, R.**, Johnson, J.A., Fabrycky, D., Foreman-Mackey, D., Murray-Clay, R., Bouchard, L., Cargile, P., Clubb, K., Fulton, B., Hebb, L., Howard, A., Huber, H., Shporer, A., Valenti, J., 2014, Astrophysical Journal, 791, 89
9. *Giant planets orbiting metal-rich stars show signatures of planet-planet interactions*, **Dawson, R.** & Murray-Clay, R.A., 2013, ApJL, 767, L14
10. *The Photoeccentric Effect and Proto-Hot Jupiters II. KOI-1474.01, a candidate eccentric planet perturbed by an unseen companion*, **Dawson, R.**, Johnson, J.A., Morton, T., Crepp, J., Fabrycky, D., Murray-Clay, R., & Howard, A. 2012, Astrophysical Journal, 761, 163
11. *The Photoeccentric Effect and Proto-Hot Jupiters I. Measuring photometric eccentricities of individual transiting planets*, **Dawson, R.** & Johnson, J.A. 2012, Astrophysical Journal, 756, 122.
12. *Neptune's wild days: constraints from the eccentricity distribution of the classical Kuiper belt*, **Dawson, R.** & Murray-Clay, R. 2012, Astrophysical Journal, 750, 43.
13. *On the misalignment of the directly imaged planet β Pictoris b with the system's warped inner disk*, **Dawson, R.**, Murray-Clay, R., & Fabrycky, D., 2011, Astrophysical Journal Letters, 743, L17.
14. *Radial velocity planets de-aliased. A new, short period for Super-Earth 55 Cnc e*, **Dawson, R.** & Fabrycky, D., 2010, Astrophysical Journal, 722, 937-953.

Second author:

Submitted:

15. *Limits on the number of primordial Scattered Disk objects at Pluto mass and higher from the absence of their dynamical signatures on the present day trans-Neptunian Populations*, Shannon, A. & **Dawson, R.** 2018, submitted to MNRAS
16. *Three Pathways for Observed Resonant Chains*, MacDonald M. & **Dawson, R.** 2018, submitted to AAS Journals

Published:

17. *Stability and Occurrence Rate Constraints on the Planetary Sculpting Hypothesis for "Transitional" Disks*, Dong, R. & **Dawson, R.** 2016, Astrophysical Journal, 825, 77.

18. *Resonances, chaos, and short-term interactions among the inner Uranian satellites*, French, R.G., **Dawson, R.**, & Showalter, M. 2015, *Astronomical Journal*, 149, 142
19. *Advances in Exoplanet Science from Kepler*, Lissauer, J., **Dawson, R.**, & Tremaine, S. 2014, *Nature*, 513, 336
20. *Neptune on tiptoes: dynamical histories that preserve the cold classical Kuiper belt*, Wolff, S., **Dawson, R.** & Murray-Clay R. 2012, *Astrophysical Journal*, 746, 171.

Third+ author:

21. *OSSOS IX: TWO OBJECTS IN NEPTUNE'S 9:1 RESONANCE – IMPLICATIONS FOR RESONANCE STICKING IN THE SCATTERING POPULATION*, Volk, K., Murray-Clay, R., Gladman, B., & 14 others incl. **Dawson, R.**, *Astronomical Journal*, in press
22. *OSSOS: VII. 800+ trans-Neptunian objects --- the complete data release*, Bannister, M., Gladman, B., Kavelaars, J., & 43 others incl. **Dawson, R.**, 2018, *Astrophysical Journal Supplements*, 236, 18
23. *Discovery of a Substellar Companion to the Nearby Debris Disk Host HR 2562*, Konopacky, Q., Rameau, J., Duchene, G., & 54 others incl. **Dawson, R.**, 2016, *Astrophysical Journal Letters*, 829, L4
24. *β Pictoris's Inner Disk in Polarized Light and New Orbital Parameters for β Pictoris b*, Millar-Blanchaer, M., Graham, J., Pueyo, L., Kalas, P., **Dawson, R.**, & 58 others, 2015, *Astrophysical Journal*, 811, 18
25. *Discovery and spectroscopy of the young Jupiter-like planet 51 Eri b with the Gemini Planet Imager*, Macintosh, B., Graham, J., Barman, T., & 85 others incl. **Dawson, R.**, 2015, *Science*, 350, 64
26. *How low can you go? The photoeccentric effect for planets of various sizes*, Price, E., Rogers, L., Johnson, J.A., & **Dawson, R.**, 2015, *Astrophysical Journal*, 799, 17
27. *A Combined Very Large Telescope and Gemini Study of the Atmosphere of the Directly Imaged Planet, β Pictoris b*, Currie, T, Burrows, A., Madhusudhan, N., & 10 others incl. **Dawson, R.**, 2013, *Astrophysical Journal*, 776, 15
28. *Kepler-63b: A Giant Planet in a Polar Orbit around a Young Sun-like Star*, Sanchis-Ojeda, R., Winn, J. N., Marcy, G. W., & 19 others incl. **Dawson, R.**, 2013, *Astrophysical Journal*, 775, 54
29. *A Super-Earth transiting a naked eye star*, Winn, J., Matthews, J., **Dawson, R.**, & 11 others, 2011, *Astrophysical Journal Letters*, 737, L18.

GRANTS

- ORAU Ralph E. Powe Junior Faculty Enhancement Award, *Debris Disk as Signposts in Multi-Planet Systems*, **PI: Rebekah Dawson**, \$10,000, 2018-2019
- NASA TESS Guest Investigator Program, *Detection and Characterization of Warm Jupiters*, **PI: Rebekah Dawson**, CO-Is: Chelsea Huang, Billy Quarles, Jack Lissauer, Thomas Beatty, \$50,000, 2018-2020
- NASA Exoplanet Research Program (XRP), *Assessing the Hallmarks of Migration and In Situ Formation in Multi-Exoplanet Systems*, **PI: Rebekah Dawson**, CO-Is: Sarah Morrison, Angie Wolfgang, \$402,596, 2018-2020
- NASA Exoplanet Research Program (XRP), *Warm Large Exoplanets*, **PI: Rebekah Dawson**, CO-Is: Billy Quarles, Jack Lissauer, \$326,019, 2016-2018

SCIENTIFIC TALKS

Invited Colloquia, Seminars, Lunch Talks

1. Aarhus Stellar Astrophysics Centre Seminar, May 11th, 2018
2. Columbia Colloquium, March 21st, 2018
3. University of Chicago Colloquium, March 7th, 2018
4. Stochastic Modeling and Computing Seminar, Penn State Statistics, February 22nd, 2018
5. CIERA Seminar, February 13th, 2018
6. NASA JPL, January 4th, 2018
7. KIPAC Astrophysics Colloquium, May 18th, 2017
8. LUVOIR Seminar, June 29th, 2016
9. University of Pittsburgh Seminar, April 8th, 2016
10. Yale Colloquium, March 31st, 2016
11. Lowell Observatory Colloquium, March 10th, 2016
12. University of Nevada at Las Vegas Seminar, February 5th, 2016
13. Carnegie DTM Seminar, January 28th, 2016
14. Carnegie Observatories Colloquium, December 8th, 2015
15. Harvard ITC Colloquium, October 29th, 2015
16. Harvard ITC Lunch, October 29th, 2015
17. SETI-Ames Dynamics Lunch, October 21st, 2015
18. ETH Zurich Institute for Astronomy Seminar, October 13th, 2015
19. University of Colorado Boulder Astrophysical and Planetary Sciences Colloquium, September 21st, 2015
20. UC Berkeley Astronomy Colloquium, September 14th, 2015
21. UC Berkeley Department Lunch, September 14th, 2015
22. CITA Seminar, April 22nd, 2015
23. UC Davis Geology Seminar, April 8th, 2015
24. Thunch Talk, Princeton, November 20th, 2014
25. Astronomy Colloquium, Caltech, November 5th, 2014
26. Astronomy Seminar, Penn State, October 30th, 2014
27. Astrophysics Colloquium, MIT, October 28th, 2014
28. Astronomy Colloquium, University of Illinois, September 30th, 2014.
29. Astronomy Colloquium, University of Washington, June 5th, 2014.
30. Center for the Origin, Dynamics, and Evolution of the Planets Seminar, University of California Santa Cruz, May 30th, 2014
31. Astronomy Colloquium, University of California Santa Cruz, March 12th, 2014.
32. Astrophysics Seminar, New York University, March 7th, 2014
33. SSETI Institute Seminar, SETI Institute, January 21st, 2014
34. Astronomy Colloquium, University of California Los Angeles, December 4th, 2013.
35. Seminar, University of Bern, July 22nd, 2013
36. Center for Astrophysics and Habitable Worlds Seminar, Penn State, March 15th, 2013.
37. Seminar, MPIA Heidelberg, June 9th 2011

Invited Conference Talks

1. *Art and Architecture of Planetary Systems*, Transiting Exoplanets Conference, Keele, UK, July 18th, 2017.
2. *Inner Solar Systems* (invited plenary), American Astronomical Society, Austin, TX, June 5th, 2017.
3. *Forming small planets around small stars*, Opportunity M workshop, Cambridge, Massachusetts, August 29th, 2016.

4. *Introduction to Exoplanet Data*, Program on Statistical, Mathematical and Computational Methods for Astronomy Opening Workshop, Research Triangle Park, North Carolina, August 22nd, 2016.
5. *The critical role of residual gas in establishing planetary orbits and compositions.*, Exoplanets 1, Davos, Switzerland, July 6th, 2016.
6. *Characterizing Kepler's transiting planets in the presence of correlated noise.*, Statistical Challenges in Modern Astronomy VI, Pittsburgh, Pennsylvania, June 9th, 2016.
7. *Time Domain Challenges for Exoplanets.*, AAS Special on Time Domain Methodologies, Kissimmee, Florida, January 2016.
8. *Planetary Systems and their Evolution.*, U.S. Radio/Millimeter/Submillimeter Science Futures in the 2020s, Chicago, Illinois, December 15th-17th, 2015.
9. *New Views on Inner Solar Systems and Extreme Planets* (invited plenary), American Astronomical Society Division for Planetary Science Meeting, National Harbor, District of Columbia, November 8-13, 2015.
10. *Giant planet formation and migration scenarios* (review talk), OHP 2015 : Twenty years of giant exoplanets, Saint-Michel-l'Observatoire, France, October 5-9, 2015.
11. *The interplay between aliasing and stellar activity.*, the Extreme Precision Radial Velocities Workshop, New Haven, Connecticut, July 5-8, 2015.
12. *Planet Migration and Its Collateral Effects* (Discussion Leader), Gordon Conference on the Origins of Solar Systems, Mount Holyoke, Massachusetts, June 28-July 3, 2015.
13. *TTV Planets: Farm to Table.*, KITP: Physics of Exoplanets, Santa Barbara, California, February 23-27, 2015.
14. *Warm Jupiters as failed hot Jupiters.*, AAS Special on Short Period Planets, Seattle, Washington, January 2015.
15. *The role of metallicity in establishing giant planet dynamics.*, Towards Other Earths II: The Planet-Star Connection, Porto, Portugal, September 15th-19th, 2014.
16. *The Legacy of Giant Planet Dynamical Histories.*, Exoplanets in the Post-Kepler Era, Cambridge, Massachusetts, May 20th-21st, 2013.
17. *Upheaval in Systems of Giant Planets*, Women in AeroSpace Symposium, Cambridge, Massachusetts, April 17th-19th, 2013.

Contributed Seminars and Lunch Talks

1. *Hallmarks of Migration*, Penn State Tuesday Lunch, February 28, 2017.
2. *Origins of Planetary Systems*, Penn State Tuesday Lunch, April 12th, 2016.
3. *Lessons from Exceptional Exoplanets*, UC Berkeley Miller Lunch, October 20th, 2015.
4. *Insights from Exoplanet Exceptions*, KITP Physics of Earths Workshop, December 5th, 2015.
5. *The astronomy of exoplanets*, UC Berkeley Astronomy Department Lunch, October 9th, 2014.
6. *New Constraints on Planet Formation: A Tale of Two Conferences*, UC Berkeley Center for Integrative Planetary Science Seminar, September 24th, 2014.
7. *Tidal dissipation of hot Jupiter spin-orbit alignment*, UC Berkeley Astronomy Department Lunch, April 29th, 2014.
8. *Planetary tidal migration*, Center for Integrative Planetary Science Seminar, UC Berkeley, November 18th, 2013.
9. *The Legacy of Giant Planet Dynamical Histories in the Post-Kepler Era*, UC Berkeley Astronomy Department Lunch, October 17th, 2013.
10. *The origin of hot Jupiters*, Center for Integrative Planetary Science Seminar, UC Berkeley, October 9th, 2013.

11. *On the Migratory Behavior of Planetary Systems*, Raytheon Technical Seminar Series, July 10th, 2013.
12. *The search for super-eccentric proto-hot Jupiters*, Planet Lunch, Harvard CfA, January 22nd, 2013.
13. *Some assembly required: Nature's instruction booklet for planetary migration*, Wunch Talk, Princeton, December 5th, 2012
14. *Neptune's Wild Days: Evidence from the Classical Kuiper Belt*, Institute for Advanced Study Bahcall Lunch, December 4th, 2012.
15. *Radial velocities de-aliased*, Princeton Exoplanets Lunch, December 3rd, 2012.
16. *A paucity of proto-hot Jupiters on super-eccentric orbits*, ITC Lunch, November 28th, 2012.
17. *Some assembly required: Nature's instruction booklet for planetary migration*, Planet and Star Formation Seminar, University of California Berkeley, November 7th, 2012
18. *Some assembly required: Nature's instruction booklet for planetary migration*, Theoretical Astrophysics Program Colloquium, University of Arizona Tucson, October 22nd, 2012
19. *Some assembly required: Nature's instruction booklet for planetary migration*, CIERA Special Seminar, Northwestern, October 4th, 2012
20. *The Big Planet that Couldn't: The Mystery of the Warped Disk Beta Pictoris*, Graduate Predoc Forum, November 16th, 2011.
21. *Constraints on the Dynamical History of the Solar System*, ITC Lunch, Harvard CfA, April 1st, 2011.

Contributed Conference Talks

1. *Testing the Origins of Close-In Exoplanet Populations*, the SAMSI ASTRO Transition Workshop, Research Triangle Park, NC, May 8th, 2017.
2. *The Critical Role of Residual Gas in Establishing Super-Earths' Compositions and Orbital Architectures*, Formation and Dynamical Evolution of Exoplanets, Aspen, Colorado, March 31st, 2017.
3. *Mitigating bias in testing the origins of warm Jupiters via constraints on transit duration variations*, the American Astronomical Society Meeting #229, Grapevine, Texas, January 7th, 2017.
4. *Formation of Super-Earths and Mini-Neptunes*, the Statistical, Mathematical and Computational Methods for Astronomy Program on Exoplanet Populations, October 20th, 2016.
5. *Disks and Dynamics Tutorial*, Gemini Planet Imager meeting, September 12th, 2016.
6. *Connections among spacing, composition, and flatness in super-Earth systems*, American Astronomical Society Meeting #227, Kissimmee, Florida, January 6th, 2016.
7. *Origins and Signals of Super-Earths and Mini-Neptunes*, Bay Area Exoplanets, Mountain View, California, March 20, 2015.
8. *The whodunit of debris disk archaeology*, Thirty Years of Beta Pic and Debris Disk Studies, Paris, France, September 8, 2014.
9. *Toward mitigating the impact of correlated noise on the detection and characterization of Kepler planets*, ExoStats 2014. Pittsburgh, Pennsylvania, June 18, 2014.
10. *Challenges in Inferring and Interpreting Planetary Orbital Properties*, Bay Area Exoplanets Meeting, Mountain View, California, March 14, 2014.
11. *KOI-1474: A Case Study for Giant Planet Migration*, Bay Area Exoplanets Meeting, Mountain View, California, December 6, 2013.
12. *Origins and Evolution of Planetary Systems with GPI*, Gemini Planet Imager Meeting, Mountain View, California, November 1st-2nd, 2013.
13. *Constraining planetary migration mechanisms in systems of giant planets*, Modern Statistical and Computational Methods for Analysis of Kepler Data, Research Triangle Park, North Carolina, June 10th-28th, 2013.

14. *Constraining planetary migration mechanisms in systems of giant planets.*, International Astronomical Union Symposium 299: Exploring the Formation and Evolution of Planetary Systems, Victoria, British Columbia, Canada, June 2nd-7th, 2013.
15. *Disk Migration vs. Multi-body Interactions: Kepler constraints from highly-eccentric hot Jupiter progenitors*, Exoplanets in Multi-body Systems in the Kepler Era, Aspen, Colorado, February 9-15, 2013. (**Block Award**).
16. *Constraining Planetary Migration Mechanisms with Highly Eccentric Hot Jupiter Progenitors*, American Astronomical Society, Long Beach, California, January 6th-10th, 2013 (**Rodger Doxsey Travel Prize**).
17. *Neptune's Wild Days: Constraints from the Classical Kuiper Belt*, American Astronomical Society Division on Dynamical Astronomy Meeting, Mt. Hood, Oregon, May 6th-May 10th, 2012.
18. *Planetesimal Disks as Tracers of Planet-Planet Scattering, at Home and Abroad.*, "Extreme Solar Systems II," Moran, Wyoming, September 11th-17th 2011.
19. *Migration and Scattering: Constraints on the Dynamical History of the Solar System.*, "Exploring Strange New Worlds," Flagstaff, AZ, May 1st-6th, 2011.
20. *Secular Constraints on the Dynamical History of the Solar System*, American Astronomical Society Division on Dynamical Astronomy Meeting, Austin, TX, April 10th-14th, 2011. (**Student stipend award.**)
21. *Packed Perturbers: Short-term Interactions Among Uranus' Inner Moons*, American Astronomy Society Division on Dynamical Astronomy Meeting, Boston, MA, April 25th-29th, 2010.

Contributed Conference Posters

1. *Connections among spacing, composition, and flatness in super-Earth systems*, American Astronomical Society Division for Planetary Science Meeting, National Harbor, District of Columbia, November 8-13, 2015.
2. *A metallicity recipe for rocky planets*, Gordon Conference on Origins of Solar Systems, Mount Holyoke, Massachusetts, June 28-July 3, 2015.
3. *Planetary Systems Great and Small*, Miller Symposium, Point Reyes Station, California, June 2015.
4. *Planetary Systems in 4D*, Miller Symposium, Point Reyes Station, California, June 6th-8th, 2014.
5. *KOI-1474: A Case Study for Giant Planet Migration.*, Kepler Science Conference II, Mountain View, California, November 4th-8th, 2013.
6. *gadgetbelt: a tool for modeling planetary sculpting of massive debris disks.*, Protostars and Planets VI, Heidelberg, Germany, July 15th-20th, 2013.
7. *The Photoeccentric Effect and Proto-Hot-Jupiters*, Sagan Workshop, Pasadena, California, July 22nd-27th, 2012.
8. *The Photoeccentric Effect and Proto-Hot-Jupiters*, the American Astronomy Society Division on Dynamical Astronomy Meeting, Mt. Hood, Oregon, May 6th-May 10th, 2012.
9. *On the Misalignment of the Directly Imaged Planet β Pictoris b with the System's Warped Inner Disk*, American Astronomy Society Division on Dynamical Astronomy Meeting, Mt. Hood, Oregon, May 6th-May 10th, 2012.
10. *Secular Constraints on the Dynamical History of the Solar System*, WE-Heraeus Seminar "Extrasolar Planets: Toward Comparative Planetology beyond the Solar System," June 5th-8th 2011. (**Poster prize honorable mention**).
11. *Secular Constraints on the Dynamical History of the Solar System*, American Astronomical Society, Boston, MA, May 22nd- 26th 2011.

12. *Radial Velocities De-aliased.*, Astronomy of Precise Radial Velocities, University Park, PA, August 16th-19th 2010.
13. *Radial Velocities De-aliased*, American Astronomical Society, Miami, FL, May 23nd- 27th 2010. (**Chambliss student research prize.**)
14. *Dynamical Interactions Among the Small, Inner Moons of Uranus*, American Astronomy Society Division on Dynamical Astronomy Meeting, Virginia Beach, VA, May 2nd-5th, 2009.

TEACHING

- **2016—present Assistant Professor**, The Pennsylvania State University, Courses: Astro 5 (Fall 2017; general education undergraduate course for non-majors), Astronomy 577/Astronomy 585 (Spring 2016, 2018; graduate elective class on exoplanets, a new course developed by **Dawson**), Astronomy 589 (Fall 2016; graduate seminar on exoplanet time series, course developed by **Dawson**), individual study supervisor (Matthias He, Jonathan Jackson, Mariah MacDonald, Jiayin Dong, Emily Safsten), Astronomy 597 (Evolution of the Biosphere; Spring 2018)
- **2016—present Guest Lecturer**, The Pennsylvania State University, Courses: Astronomy 6: Stars, Galaxies, and the Universe (one lecture); Meteorology 466: Planetary Atmospheres (two lectures); Astro 497: Topics in Planetary Sciences (one lecture); Biol/Geosci 474: Astrobiology (two lectures)
- **2017 Guest Lecturer**, *Exoplanet Dynamics Tutorial*, The Technologies for Exo-Planetary Science Summer School Workshop, Montreal, Canada, June 15th, 2017 (invited)
- **2016 Guest Lecturer**, *Time Domain Challenges for Exoplanets*, the Statistical, Mathematical and Computational Methods for Astronomy Undergraduate Workshop, Research Triangle Park, NC, October 24th, 2016 (invited)
- **2015 Guest Lecturer**, Harvard University Banneker Institute summer research program, Order-of-Magnitude Astronomy (invited)
- **2012 Guest Lecturer**, Wellesley College, Astronomy 107: Extrasolar Planet Research w/ Lab (invited)
- **2010 Teaching Fellow**, Harvard University, Courses: Astronomy 110: Exoplanets (*Certificate of Distinction in Teaching*), Astronomy 16: Stellar and Planetary Astronomy
- **2010 Guest Lecturer**, Harvard University, Astronomy 16: Stellar and Planetary Astronomy
- **2008–2009 Physics Tutor**, Wellesley College, Introductory Mechanics, Introductory Electromagnetism
- **2006–2009 Computing Consultant**, Wellesley College Information Services Computing Help Desk
- **2006–2007 Mathematics Tutor and Grader**, Wellesley College, Mathematics for the Sciences
- **2005–2007 Whitin Observatory Night Assistant**, Wellesley College, Astronomy 100
- **2006 Astronomy Grader**, Wellesley College, Astronomy 101

RESEARCH ADVISING

- **Spring 2018 — present**, Emily Safsten (Penn State graduate student), “Time Evolution of Exoplanet Systems.”

- **Fall 2017 — present**, Shirin Zaidi (Penn State undergraduate), “Deposition of Material from Enceladus on Trojan Moons,” co-advised with Sarah Morrison.
- **Fall 2017 — present**, Michael Penwarden (Penn State undergraduate), “Eccentricity Excitation in the Habitable Zone,” co-advised with Sarah Morrison.
- **Fall 2017 — present**, Sarah Morrison (Penn State postdoc), “Planetary dynamics and migration.”
- **Summer 2017 — present**, Jiayin Dong (Penn State graduate student), “Debris disk sculpting in multi-planet systems.”
- **Fall 2016 — present**, Rory Bowens (Penn State undergraduate), “Long term stability of transitional disk sculpting planetary systems,” co-advised with Andrew Shannon.
- **Fall 2016 — present**, Mariah MacDonald (Penn State graduate student), “Super-Earth formation and dynamics.”
- **Fall 2016 — present**, Andrew Shannon (Penn State research associate), “Formation and dynamics of planets and debris disks.”
- **Summer 2016 — present**, Jonathan Jackson (Penn State graduate student), “Origins of warm Jupiters.”
- **Spring 2016 — Spring 2017**, Paige Campbell (Penn State undergraduate), “Host star metallicity dependence of high eccentricity migration.”
- **Summer 2015 — Spring 2017**, Arjun Khandelwal (Haverford College undergraduate), “Recovery of long-period transiting planets.”
- **Fall 2015**, Diana Kossakowski (UC Berkeley undergraduate), “Tidal realignment of stars by hot Jupiters in the presence of oblateness coupling of the star’s core and envelope.”
- **Spring 2015 — Summer 2015**, Sofia Sheikh (UC Berkeley undergraduate), “Constraints on super-eccentric proto-hot Jupiters missed by the *Kepler* pipeline”
- **Spring 2014 — Fall 2014**, Joseph Zalesky (UC Berkeley undergraduate), “The role of a third planet in the dynamical evolution of the Kepler-419 system.”
- **Summer 2012**, Eric Mukherjee (Caltech undergraduate), “Constraining Planetesimal Formation Mechanisms from Planetary Debris Disks,” co-advised with Ruth Murray-Clay.

ACADEMIC SERVICE

- **Mentor** (via videoconferencing), Wellesley College Alumnae Network (2017-present)
- **Member:** Gemini Planet Imager Steering Committee (2017-present)
- **Academic Advisor** to Matthias He (Penn State graduate student) and Penn State undergraduates: Chad Pozarycki, Samuel Ruth, Douglas Stout, Jeremy Chen, Dylan Dirkmaat, Charles Hapich, Brenda Jones, Maya Marcy, Arjina Islam, Mya Crews, Adam Stone
- **Departmental Committee Member:** Penn State Astronomy colloquium and departmental talks committee, *chair* (2017-2018), Penn State Astronomy Graduate Admissions Committee (2016-2018), Penn State Astronomy Graduate Program Committee (2016-2018), Penn State College Ethics Committee (2016)
- **Member:** Large UV/Optical/Infrared Surveyor (LUVOIR) Science Definition Team (2016-present)

- **Member:** WFIRST Science Investigation Team, “Characterizing Extrasolar Planetary Systems with the WFIRST Coronagraph” (2016-present)
- **Referee** Astrophysical Journal Letters (2012-present), Astrophysical Journal (2013-present), Icarus (2013-present), MNRAS (2015-present), Nature (2014-present), PASP (2016-present), PNAS (2016-present), Science (2014-present)
- **Panelist/Reviewer/Panel Chair/Executive Secretary:** NASA (2013-present), NSF (2014-present)
- **Meeting-within-a Meeting Organizer,** Inner Solar Systems, American Astronomical Society, Austin, TX, June 5-6th, 2017.
- **Organizer:** Penn State Center for Exoplanets and Habitable Worlds Seminar (2016-2017)
- **Comprehensive Exam Committee Member:** Mark Wells (August 2017), Noah Tuchow (December 2017), Matthias He (May 2018), Mariah MacDonald (May 2018), Jonathan Jackson (May 2018), Caleb Cañas (scheduled for August 2018)
- **Second Year Project Reader:** Matthias He (December 2018)
- **Thesis Committee Member:** Jason Curtis PhD dissertation defense (August 2016)
- **Scientific Organizing Committee Member:** Extreme Precision Radial Velocity Workshop (August 2017), Habitable Worlds 2017: A System Science Workshop (November 2017)
- **Committee Member:** UC Berkeley Center for Integrative Planetary Science Seminar (2013-2015), UC Berkeley Theoretical Astrophysics Center Seminar (2014-2015), UC Berkeley Miller Symposium (2014-2015), Harvard-Smithsonian Center for Astrophysics Graduate Pre-doctoral Research Forum (2011-2013), Division on Dynamical Astronomy 41st Meeting Local Organizing Committee (2010), Wellesley College Study Abroad Office Advisory Council (2008-2009)
- **Guest blogger,** Committee for the Status of Women in Astronomy (2012-2013)
- **Student coordinator of student office assignments,** Harvard Astronomy Department (2011-2013)
- **Organizer:** Harvard Astronomy Department Student-Faculty Lunches (2010-2011)
- **Volunteer:** American Astronomical Society 218th Meeting (2011)

OUTREACH

- **2018 February 10,** Frontiers of Science public lecturer, “The Birth of Habitable Planets” (invited)
- **2017 July 12–14,** AstroFest: public lecturer, “TRAPPIST 1 Planetary System: Your New Tiny Red Home”; volunteer, exoplanet demonstrations and astronomy art
- **2017 June 22,** Penn State In-service Workshop in Astronomy, lecturer to high school teachers (invited)
- **2017 April 17,** Take Your Children to Work Day activity leader, Penn State
- **2017 April 10,** public lecturer, “TRAPPIST 1 Planetary System: Your New Tiny Red Home,” Astronomy on TAP (invited)
- **2017 March 29,** Aspen Science Cafe panelist; shared career and research and answered question from members of the public (invited)
- **2017 January 29,** Job shadowing mentor to high school junior, Brenna Mullins
- **2016 July 16 - 17,** AstroFest: public lecturer, “Giant planet surprises” & Astronomy Idol; volunteer, exoplanet demonstrations and activities for children

- **2015 March 21**, Science@Cal public lecturer, “Exoplanet Surprises” (invited)
- **2011-2014**, Scientist visitor to elementary and high school classes
- **2013 April 22**, NOVA Science Cafe scientist speaker, “Giant Planet Surprises” (invited)
- **2013 February 21**, Harvard CfA Monthly Observatory Night lecturer, “Giant Planet Mysteries” (invited)
- **2012 April 28**, Cambridge Explores the Universe Volunteer
- **2009-2012**, Women in Science, Math, Technology, and Engineering Mentor Program, mentor to four undergraduate women
- **2009-2010**, Volunteer teacher for Grade 7-12 weekend programs through MIT Educational Studies Program. Designed and taught two science courses for middle/high schoolers
- **2009**, Kids Capture the Universe, middle school after-school program, volunteer teacher
- **2008-2009**, Let’s Get Ready Math SAT Coach (program for underrepresented high school students), head math coach in Spring 2009
- **2008-2009**, Tutor/mentor, Wellesley College Mentoring in the Sciences Program for underrepresented students
- **2008-2009**, President, Wellesley College Astronomy Students Toward Recreational Observing
- **2006-2007**, Treasurer, Wellesley College Astronomy Students Toward Recreational Observing

REFERENCES

- 1) **Ruth Murray-Clay** (PhD Supervisor), UCSC Dept. Astronomy
- 2) **John Johnson**, Harvard University Dept. Astronomy
- 3) **Eugene Chiang**, UCB Dept. Astronomy