PETER BEHROOZI (HE/HIM)

CURRICULUM VITÆ

CONTACT INFORMATION:

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RESEARCH AREAS:

Topics: Galaxy Formation, Dark Matter Halos, Supermassive Black Holes
Methods: Bayesian Machine Learning

EDUCATION AND APPOINTMENTS:

Associate Professor; University of Arizona	8/2021 – present
Project Researcher; National Astronomical Observatory of Japan	7/2022 – present
Assistant Professor; University of Arizona	8/2017 – 8/2021
Hubble Postdoctoral Fellow; UC Berkeley	12/2015 – 8/2017
Giacconi Postdoctoral Fellow; Space Telescope Science Institute	9/2013 – 12/2015
Postdoctoral Scholar; Stanford University	7/2012 – 8/2013
PhD, Physics; Stanford University (Advisor: Risa Wechsler)	9/2006 – 6/2012
BA, Physics and Math; Harvard University (*magna cum laude*)	9/2002 – 6/2006

PAPERS PUBLISHED / IN PRESS (146 TOTAL):

Statistics (ADS): $n_{\rm cites} > 15000$, $h = 62$. First-author: $n_{\rm cites} > 6000$, $h = 17$.
Most-cited paper: #20, $n_{\rm cites} > 1500$.

— Refereed first- and student-authored papers in astrophysics —

1. Bowden, **Behroozi**, Hearin, "Halo Properties from Observable Measures of Environment: I. Halo and Subhalo Masses," OJAp[1] 6, 37 (2023).
2. Zhang, **Behroozi**, Volonteri, et al., "Trinity II: The Luminosity-dependent Bias of the Supermassive Black Hole Mass–Galaxy Mass Relation for Bright Quasars at $z = 6$," MNRAS 523, 69 (2023).
3. Zhang, **Behroozi**, Volonteri, et al., "Trinity I: Self-Consistently Modeling the Dark Matter Halo-Galaxy-Supermassive Black Hole Connection from z=0–10," MNRAS 518, 2123 (2023).
4. O'Donnell, **Behroozi**, More, "Observing Correlations Between Dark Matter Accretion and Galaxy Growth: II. Testing the Impact of Galaxy Mass, Star Formation Indicator, and Neighbour Colours," MNRAS 509, 3285 (2022).
5. **Behroozi**, Hearin, Moster, "Observational Measures of Halo Properties Beyond Mass," MNRAS 509, 2800 (2022).
6. O'Donnell, **Behroozi**, More, "Observing Correlations Between Dark Matter Accretion and Galaxy Growth: I. Recent Star Formation Activity in Isolated Milky Way-Mass Galaxies," MNRAS 501, 1253 (2021).
7. O'Donnell, Prather, **Behroozi**, "Making Science Personal: Inclusivity-Driven Design for General-Education Courses," Journal of College Science Teaching 50, 68 (2021).

[1] I encourage authors to consider submitting to the Open Journal of Astrophysics (OJAp). The journal does not charge authors or readers, its refereeing process is similar to previous journals I have used (MNRAS and ApJ), and for those who care, it even has higher impact factor. I am not affiliated with OJAp in any way; instead, I view it as a better and more accessible model for how our community should approach the publication process.

8. **Behroozi**, Conroy, Hearin, et al., "The Universe at $z > 10$: Predictions for JWST from the UniverseMachine DR1," MNRAS 499, 5932 (2020).
9. Endsley, **Behroozi**, et al., "Clustering with JWST: Constraining Galaxy Host Halo Masses, Satellite Quenching Efficiencies, and Merger Rates at z=4-10," MNRAS 493, 1178 (2020).
10. Allen, **Behroozi**, Ma, "Constraining Scatter in the Stellar Mass–Halo Mass Relation for Haloes Less Massive than the Milky Way," MNRAS 488, 4916 (2019).
11. **Behroozi**, Wechsler, Hearin, Conroy, "UniverseMachine: The Correlation between Galaxy Growth and Dark Matter Halo Assembly from z=0-10," MNRAS 488, 3143 (2019).
12. **Behroozi** & Silk, "The Most Massive Galaxies and Black Holes Allowed by ΛCDM," MNRAS 477, 5382 (2018).
13. Choksi, **Behroozi**, Volonteri, et al., "Recoiling Supermassive Black Hole Escape Velocities from Dark Matter Halos," MNRAS 472, 1526 (2017).
14. **Behroozi** & Peeples, "On The History and Future of Cosmic Planet Formation," MNRAS 454, 1811 (2015).
15. **Behroozi**, Knebe, Pearce, et al., "Major Mergers Going Notts: Challenges for Modern Halo Finders," MNRAS 454, 3020 (2015).
16. **Behroozi**, Zhu, Ferguson, et al., "Using Galaxy Pairs to Probe Star Formation During Major Halo Mergers," MNRAS 450, 1546 (2015).
17. **Behroozi** & Silk, "A Simple Technique for Predicting High-Redshift Galaxy Evolution," ApJ 799, 32 (2015).
18. **Behroozi**, Ramirez-Ruiz, Fryer, "Interpreting Short Gamma Ray Burst Progenitor Kicks and Time Delays Using the Host Galaxy-Dark Matter Halo Connection," ApJ 792, 123 (2014).
19. **Behroozi**, Wechsler, Lu, et al., "Mergers and Mass Accretion for Infalling Halos Both End Well Outside Cluster Virial Radii," ApJ 787, 156 (2014).
20. **Behroozi**, Wechsler, Conroy, "The Average Star Formation Histories of Galaxies in Dark Matter Halos from z=0-8," ApJ 770, 57 (2013).
21. **Behroozi**, Marchesini, Wechsler, et al., "Using Cumulative Number Densities to Compare Galaxies Across Cosmic Time," ApJ 777, L10 (2013).
22. **Behroozi**, Loeb, Wechsler, "Unbound Particles in Dark Matter Halos," JCAP 6, 19 (2013).
23. **Behroozi**, Wechsler, Conroy, "On the Lack of Evolution in Galaxy Star Formation Efficiency," ApJL 762, L31 (2013).
24. **Behroozi**, Wechsler, Wu, "The Rockstar Phase-Space Temporal Halo Finder and the Velocity Offsets of Cluster Cores," ApJ, 762, 109 (2013).
25. **Behroozi**, Wechsler, Wu, et al., "Gravitationally Consistent Halo Catalogs and Merger Trees for Precision Cosmology," ApJ, 763, 18 (2013).
26. **Behroozi**, Conroy, Wechsler, "A Comprehensive Analysis of Uncertainties Affecting the Stellar Mass - Halo Mass Relation for $0 < z < 4$," ApJ, 717, 379 (2010).

— Refereed papers with collaborators as first authors —

27. Zaritsky, **Behroozi**, "Photometric Mass Estimation and the Stellar Mass-Halo Mass Relation for Low Mass Galaxies," MNRAS 519, 871 (2023).
28. Fujimoto et al., "CEERS Spectroscopic Confirmation of NIRCam-Selected z > 8 Galaxy Candidates with JWST/NIRSpec: Initial Characterization of their Properties," ApJL 949, 25 (2023).
29. Finkelstein et al., "CEERS Key Paper I: An Early Look into the First 500 Myr of Galaxy Formation with JWST," ApJL 946, 13 (2023).
30. Kartaltepe et al., "CEERS Key Paper III: The Diversity of Galaxy Structure and Morphology at z=3-9 with JWST," ApJL 946, 15 (2023).
31. Pérez-González et al., "CEERS Key Paper IV: A triality on the nature of HST-dark galaxies," ApJL 946, 16 (2023).
32. Yang et al., "CEERS Key Paper VI. JWST/MIRI Uncovers a Large Population of Obscured AGN at High Redshifts," ApJL 950, 5 (2023).
33. Zavala et al., "A dusty starburst masquerading as an ultra-high redshift galaxy in JWST CEERS observations," ApJ 943, 9 (2023).
34. Huertas-Company et al., "Galaxy Morphology from $z \sim 6$ through the eyes of JWST," A&A accepted.
35. Larson et al., "A CEERS Discovery of an Accreting Supermassive Black Hole 570 Myr after the Big Bang: Identifying a Progenitor of Massive z > 6 Quasars," ApJL 953, 29 (2023).

36. Coogan et al., "A $z = 1.85$ galaxy group in CEERS: Evolved, dustless, massive intra-halo light and a brightest group galaxy in the making," A&A 677, A3 (2023).
37. Guo et al., "NeutralUniverseMachine: An Empirical Model for the Evolution of HI and H_2 Gas in the Universe," ApJ 955, 57 (2023).
38. Aung et al., "The Uchuu-UniverseMachine dataset: Galaxies in and around Clusters," MNRAS 519, 1648 (2023).
39. Yung et al., "Semi-analytic forecasts for Roman – the beginning of a new era of deep-wide galaxy surveys," MNRAS 519, 1578 (2023).
40. Finkelstein et al., "A Long Time Ago in a Galaxy Far, Far Away: A Candidate z $\sim$ 12 Galaxy in Early JWST CEERS Imaging," ApJL 940, 55 (2022).
41. Yung et al., "Semi-analytic forecasts for JWST – VI. Simulated lightcones and galaxy clustering predictions," MNRAS 515, 5416 (2022).
42. Huang et al., "The Outer Stellar Mass of Massive Galaxies: A Simple Tracer of Halo Mass with Scatter Comparable to Richness and Reduced Projection Effects," MNRAS 515, 4722 (2022).
43. Finkelstein et al., "A Census of the Bright z=8.5-11 Universe with the Hubble and Spitzer Space Telescopes in the CANDELS Fields," ApJ 928, 52 (2022).
44. Harikane et al., "GOLDRUSH. IV. Luminosity Functions and Clustering Revealed with ~4,000,000 Galaxies at z~2-7: Galaxy-AGN Transition, Star Formation Efficiency, and Implication for Evolution at z>10," ApJS 259, 20 (2022).
45. Qin et al., "Linking Extragalactic Transients and their Host Galaxy Properties: Transient Sample, Multi-Wavelength Host Identification, and Database Construction," ApJS 259, 13 (2022).
46. Wang et al., "UniverseMachine: Predicting Galaxy Star Formation over Seven Decades of Halo Mass with Zoom-in Simulations," ApJ 915, 116 (2021).
47. Zhang et al., "An Empirical Determination of the Dependence of the Circumgalactic Mass Cooling Rate and Feedback Mass Loading Factor on Galactic Stellar Mass," ApJ 916, 101 (2021).
48. Klypin et al., "Clustering and Halo Abundances in Early Dark Energy Cosmological Models," MNRAS 504, 769 (2021).
49. Somerville, et al., "Mock Lightcones and Theory Friendly Catalogs for the CANDELS Survey," MNRAS 502, 4858 (2021).
50. Berti, et al., "Main Sequence Scatter is Real: The Joint Dependence of Galaxy Clustering on Star Formation and Stellar Mass," AJ 161, 49 (2021).
51. Popping, Fabian, **Behroozi**, et al., "The ALMA Spectroscopic Survey in the HUDF: A Model to Explain Observed 1.1 and 0.85 mm Dust Continuum Number Counts," ApJ 891, 135 (2020).
52. Yaryura, et al., "Associations of dwarf galaxies in a ΛCDM Universe," MNRAS 499, 5932 (2020).
53. Yung et al., "Semi-analytic forecasts for JWST – IV. Implications for cosmic reionization and LyC escape fraction," MNRAS 496, 4574 (2020).
54. Zhang et al., "Observing the Effects of Galaxy Interactions on the Circumgalactic Medium," ApJ 893, 3 (2020).
55. Zhang et al., "Hα Emission and the Dependence of the Circumgalactic Cool Gas Fraction on Halo Mass," ApJ 888, 33 (2020).
56. Miller et al., "Investigating overdensities around z>6 galaxies through ALMA observations of [CII]," ApJ 889, 98 (2020).
57. Bradshaw et al., "Physical Correlations of the Scatter between Galaxy Mass, Stellar Content, and Halo Mass," MNRAS 493, 337 (2020).
58. Huang et al., "Weak Lensing Reveals a Tight Connection Between Dark Matter Halo Mass and the Distribution of Stellar Mass in Massive Galaxies," MNRAS 492, 3685 (2020).
59. Hearin, **Behroozi**, et al., "Clustering Constraints on the Relative Sizes of Central and Satellite Galaxies," MNRAS 489, 1805 (2019).
60. Zhang, Zaritsky, **Behroozi**, Werk, "On The Effect of Environment on Line Emission from the Circumgalactic Medium," ApJ 880, 28 (2019).
61. Pandya, Primack, **Behroozi** et al., "Can intrinsic alignments of elongated low-mass galaxies be used to map the cosmic web at high redshift?," MNRAS 488, 5580 (2019).
62. Grylls et al., "Predicting fully self-consistent satellite richness, galaxy growth and starformation rates from the STastical sEmi-Empirical modeL (STEEL)," MNRAS 491, 634 (2020).
63. Lundquist et al., "Searches After Gravitational-waves Using ARizona Observatories (SAGUARO): System Overview and First Results from Advanced LIGO/Virgo's Third Observing Run," ApJL 881, 26 (2019).

64. Wang et al., "ATLAS Probe: Breakthrough Science of Galaxy Evolution, Cosmology, Milky Way, and the Solar System," PASA 36, 15 (2019).
65. Finkelstein et al., "Conditions for Reionizing the Universe with A Low Galaxy Ionizing Photon Escape Fraction," ApJ 879,36 (2019).
66. Goh et al., "Dark Matter Halo Properties vs. Local Density and Cosmic Web Location," MNRAS 483, 2101 (2019).
67. Somerville, **Behroozi** et al., "The Relationship between Galaxy and Dark Matter Halo Size from z∼3 to the present," MNRAS 473, 2714 (2018).
68. Lee, Primack, **Behroozi**, et al., "Tidal Stripping and Post-Merger Relaxation of Dark Matter Halos: Causes and Consequences of Mass Loss," MNRAS 481, 4038 (2018).
69. Zhang, Zaritsky, **Behroozi**, "Emission from the Ionized Gaseous Halos of Low Redshift Galaxies and Their Neighbors," ApJ 861, 34 (2018).
70. Zhang et al., "Emission line ratios for the Circumgalactic Medium and the 'Bimodal' Nature of Galaxies," ApJL 866, 4 (2018).
71. Fang et al., "Demographics of Star-forming Galaxies since $z \sim 2.5$. I. The UVJ Diagram in CANDELS," ApJ 858, 100 (2018).
72. Imara et al., "A Model Connecting Galaxy Masses, Star Formation Rates, and Dust Temperatures Across Cosmic Time," ApJ 854, 36 (2018).
73. Knebe et al., "MultiDark-Galaxies: data release and first results," MNRAS 454, 5206 (2018).
74. Salcedo et al., "Spatial Clustering of Dark Matter Halos: Secondary Bias, Neighbor Bias, and the Influence of Massive Neighbors on Halo Properties," MNRAS 475, 4411 (2018).
75. Harikane et al., "GOLDRUSH. II. Clustering of Galaxies at $z \sim 4-6$ Revealed with the Half-Million Dropouts Over the 100 deg^2 Area Corresponding to 1 Gpc^3," PASJ 70, 11 (2018).
76. Breysse, Kovetz, **Behroozi**, et al., "Insights from probability distribution functions of intensity maps," MNRAS 467, 2996 (2017).
77. Berti, Coil, **Behroozi**, et al., "PRIMUS: One- and Two-Halo Galactic Conformity at $0.2 < z < 1$," ApJ 834, 87 (2017).
78. Lee, Primack, **Behroozi**, et al., "Properties of Dark Matter Halos as a Function of Local Environment Density," MNRAS 466, 3834 (2017).
79. Hearin et al., "High-Precision Forward Modeling of Large-Scale Structure: An open-source approach with Halotools," AJ 154, 190 (2017).
80. Pandya et al. "The Nature of Massive Transition Galaxies in CANDELS, GAMA, and Cosmological Simulations," MNRAS 472, 2054 (2017).
81. Leauthaud et al., "Lensing is Low: Cosmology, Galaxy Formation, or New Physics?," MNRAS 467, 3024 (2017).
82. Rodríguez-Torres et al. "Clustering of quasars in the First Year of the SDSS-IV eBOSS survey: Interpretation and halo occupation distribution," MNRAS 468, 728 (2017).
83. Rodríguez-Puebla, **Behroozi**, Primack, et al., "Halo and Subhalo Demographics with Planck Cosmological Parameters: Bolshoi-Planck and MultiDark-Planck Simulations," MNRAS 462, 893 (2016).
84. Hearin, **Behroozi**, van den Bosch, "On the Physical Origin of Galactic Conformity," MNRAS 461, 2135 (2016).
85. Gu, Conroy, **Behroozi**, "Hierarchical Galaxy Growth and Scatter in the Stellar Mass – Halo Mass Relation," ApJ 833, 2 (2016).
86. Rodríguez-Puebla, Primack, **Behroozi**, Faber, "Is Main Sequence Galaxy Star Formation Controlled by Halo Mass Accretion?" MNRAS 455, 2592 (2016).
87. Guo, Zheng, **Behroozi**, et al., "Modelling Galaxy Clustering: Halo Occupation Distribution versus Subhalo Matching," MNRAS 459, 3040 (2016).
88. Guo, Zheng, **Behroozi**, et al., "Galaxy Three-Point Correlation Functions and Halo/Subhalo Models," ApJ 831, 3 (2016).
89. Pacifici, et al., "The evolution of star formation histories of quiescent galaxies," ApJ 832, 79 (2016).
90. Saito et al., "Connecting Massive Galaxies to Dark Matter Halos in BOSS. I. Is Galaxy Color a Stochastic Process in High-Mass Halos?" MNRAS 460, 1457 (2016).
91. Papovich et al., "The Spitzer-HETDEX Exploratory Large-Area Survey," ApJS 224, 28 (2016).
92. Rodríguez-Torres et al., "The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: Modeling the clustering and halo occupation distribution of BOSS-CMASS galaxies in the Final Data Release," MNRAS 460, 1173 (2016).

93. Wang et al., "Sussing Merger Trees: Stability and Convergence" MNRAS 459, 1554 (2016).
94. Kawinwanichakij et al., "Satellite Quenching and Galactic Conformity at $0.3 < z < 2.5$," ApJ 817, 9 (2016).
95. van den Bosch et al., "On the Segregation of Dark Matter Substructure," MNRAS 455, 158 (2016).
96. Finkelstein, Song, **Behroozi**, et al., "An Increasing Stellar Baryon Fraction in Bright Galaxies at High Redshift," ApJ 814, 95 (2015).
97. Guo et al., "Redshift-Space Clustering of SDSS Galaxies — Luminosity Dependence, Halo Occupation Distribution, and Velocity Bias," MNRAS 453, 4368 (2015).
98. Finkelstein et al., "The Evolution of the Galaxy Rest-Frame Ultraviolet Luminosity Function over the First Two Billion Years," ApJ 810, 71 (2015).
99. Miller et al., "The bias of the submillimetre galaxy population: SMGs are poor tracers of the most massive structures in the $z \sim 2$ Universe," MNRAS 452, 878 (2015).
100. Popping, **Behroozi**, Peeples, "Evolution of the atomic and molecular gas content of galaxies in dark matter haloes," MNRAS 449, 477 (2015).
101. Old et al., "Galaxy Cluster Mass Reconstruction Project: II. Quantifying scatter and bias using contrasting mock catalogues," MNRAS 449, 1897 (2015).
102. Papovich et al., "ZFOURGE/CANDELS: On the Evolution of M* Galaxy Progenitors from $z = 3$ to $z = 0.5$," ApJ 803, 26 (2015).
103. Grazian et al., "The galaxy stellar mass function at $3.5 \leq z \leq 7.5$ in the CANDELS/UDS, GOODS-South, and HUDF fields," A&A 575, 96 (2015).
104. Governato et al., "Faint dwarfs as a test of DM models: WDM vs. CDM," MNRAS 448, 792 (2015).
105. Salmon et al., "The Relation Between Star Formation Rate and Stellar Mass for Galaxies at $3.5 \leq z \leq 6.5$ in CANDELS," ApJ 799, 183 (2015).
106. Watson et al., "Predicting Galaxy Star Formation Rates via the Co-evolution of Galaxies and Halos," MNRAS 446, 651 (2015).
107. Shankar et al., "On the Intermediate-Redshift Central Stellar Mass–Halo Mass Relation, and Implications for the Evolution of the Most Massive Galaxies since $z \sim 1$," ApJL, 797, L27 (2014).
108. Lee et al., "Sussing Merger Trees : The Impact of Halo Merger Trees on Galaxy Properties in a Semi-Analytic Model," MNRAS 445, 4197 (2014).
109. Lu et al., "Semi-analytic Models for the CANDELS Survey: Comparison of Predictions for Intrinsic Galaxy Properties," ApJ 795, 123 (2014).
110. van der Wel et al., "3D-HST+CANDELS: The Evolution of the Galaxy Size-Mass Distribution since $z = 3$," ApJ 788, 28 (2014).
111. Hoffmann et al., "Subhaloes gone Notts: Subhaloes as tracers of the dark matter halo shape," MNRAS 442, 1197 (2014).
112. Avila et al., "Sussing Merger Trees: the influence of the halo finder," MNRAS 441, 3348 (2014).
113. Pujol et al., "Subhaloes gone Notts: the clustering properties of subhaloes," MNRAS 438, 3205 (2014).
114. Tinker et al., "Evolution of the Stellar-to-Dark Matter Relation: Separating Star-Forming and Passive Galaxies from $z = 1$ to 0," ApJ 778, 93 (2013).
115. Srisawat et al., "Sussing Merger Trees: The Merger Trees Comparison Project," MNRAS 436, 150 (2013).
116. Knebe et al., "Structure Finding in Cosmological Simulations: The State of Affairs," MNRAS 435, 1618 (2013).
117. Gerke, Wechsler, **Behroozi**, et al. "Improved Mock Galaxy Catalogs for the DEEP2 Galaxy Redshift Survey from Subhalo Abundance and Environment Matching," ApJS 208, 1 (2013).
118. Elahi et al., "Streams Going Notts: The tidal stream finder comparison project," MNRAS 433, 1537 (2013).
119. Hayward, **Behroozi**, Somerville, et al., "Spatially unassociated galaxies contribute significantly to the blended submillimetre galaxy population: predictions for follow-up observations of ALMA sources," MNRAS 434, 2572 (2013).
120. Reddick et al., "The Connection between Galaxies and Dark Matter Structures in the Local Universe," ApJ 771, 30 (2013).
121. Oman, Hudson, **Behroozi**, "Disentangling Satellite Galaxy Populations using Orbit Tracking in Simulations," MNRAS 431, 2307 (2013).
122. Knebe et al., "Galaxies going MAD: The Galaxy-Finder Comparison Project," MNRAS 428, 2039 (2013).
123. Wu et al., "Rhapsody: II. Subhalo Properties and the Impact of Tidal Stripping From a Statistical Sample of Cluster-Size Halos," ApJ 767, 23 (2013)

124. Wu et al., "Rhapsody: I. Structural Properties and Formation History From a Statistical Sample of Re-simulated Cluster-size Halos," ApJ 763, 70 (2013).
125. Onions et al., "Subhaloes gone Notts: Spin across Subhaloes and Finders," MNRAS, 429, 2739 (2013).
126. Onions et al., "Subhaloes going Notts: the subhalo-finder comparison project," MNRAS, 423, 1200 (2012).
127. Leauthaud, George, **Behroozi**, et al., "The integrated stellar content of dark matter halos," ApJ, 746, 95 (2012).
128. Leauthaud et al., "New constraints on the evolution of the stellar-to-dark matter connection: a combined analysis of galaxy-galaxy lensing, clustering, and stellar mass functions from z=0.2 to z=1," ApJ, 744, 159 (2012).
129. Busha, Wechsler, **Behroozi**, et al., "Statistics of Satellite Galaxies Around Milky Way-Like Hosts," ApJ, 743, 117 (2011).
130. George et al., "Galaxies in X-ray Groups I: Robust Membership Assignment and the Impact of Group Environments on Quenching," ApJ, 742, 125 (2011).
131. Knebe et al., "Haloes gone MAD: The Halo-Finder Comparison Project," MNRAS, 415, 2293 (2011).
132. Leauthaud, Tinker, **Behroozi**, et al., "A theoretical framework for combining techniques that probe the link between galaxies and dark matter," ApJ, 738, 45 (2011).
133. Liu et al., "How Common are the Magellanic Clouds?" ApJ, 733, 62 (2011).

— Decadal White Papers (not refereed) —

134. **Behroozi** et al., "Astro2020: Empirically Constraining Galaxy Evolution," BAAS 53c, 125 (2019).
135. Zaritsky et al., "Emission Line Mapping of the Circumgalactic Medium of Nearby Galaxies," BAAS 53c, 127 (2019).
136. Peeples, et al., "Understanding the circumgalactic medium is critical for understanding galaxy evolution," BAAS 53c, 368 (2019).
137. Wang et al., "Illuminating the dark universe with a very high density galaxy redshift survey over a wide area," BAAS 53c, 508 (2019).
138. Dickinson et al., "Observing Galaxy Evolution in the Context of Large-Scale Structure," BAAS 53c, 538 (2019).
139. Besla et al., "Astro2020: Training the Future Generation of Computational Researchers," BAAS 51g, 11 (2019).
140. Wang et al., "ATLAS Probe: Breakthrough Science of Galaxy Evolution, Cosmology, Milky Way, and the Solar System," BAAS 51g, 193.

— Refereed papers outside of astrophysics —

141. F. Behroozi & **P. Behroozi**, "Reliable Determination of Contact Angle from the Height and Volume of Sessile Drops, AJP 87, 28 (2019).
142. F. Behroozi & **P. Behroozi**, "Determination of surface tension from the measurement of internal pressure of mini soap bubbles," AmJPh, 79,1089 (2011).
143. F. Behroozi & **P. Behroozi**, "The effect of a soap film on a catenary: measurement of surface tension from the triangular configuration," EJPh, 32, 1237 (2011).
144. **Behroozi**, Cordray, Griffin, et al., "The Calming Effect of Oil on Water," AmJPh, 75, 407 (2007).
145. Diehl, Lee, **Behroozi**, et al., "Microfluidic tuning of distributed feedback quantum cascade lasers," OExpr, Vol. 14, Issue 24, 11660 (2006).
146. F. Behroozi & **P. Behroozi**, "Efficient Deconvolution of Noisy Periodic Interference Signals by Bessel Functions," JOSAA, 23, 902 (2006).

Papers Recently Submitted:

1. Zhang, **Behroozi**, Volonteri, et al., "Trinity III: Quasar Luminosity Functions Decomposed by Halo, Galaxy, and Black Hole Masses and Eddington Ratios from z=0-10," MNRAS submitted.
2. Zhang, **Behroozi**, Volonteri, et al., "TRINITY IV: Predictions for Supermassive Black Holes at z$\gtrsim$7," MNRAS submitted.
3. Hayati, **Behroozi**, Patel, "Machine Learning the Dark Matter Halo Mass of Milky Way-Like Systems," OJAp submitted.

4. Diemer, **Behroozi**, Mansfield, "Haunted haloes: tracking the ghosts of subhaloes lost by halo finders" MNRAS submitted.
5. Yung et al., "Characterising ultra-high-redshift dark matter halo demographics and assembly histories with the GUREFT simulations," MNRAS submitted.
6. Prada, **Behroozi**, Ishiyama, et al., "Confirmation of the standard cosmological model from red massive galaxies ~ 600 Myr after the Big Bang," Nature (matters arising) submitted.
7. Wang et al., "Measuring the conditional luminosity and stellar mass functions of galaxies by combining the DESI LS DR9, SV3 and Y1 data," ApJ submitted.
8. Wilkins et al., "Cosmic Evolution Early Release Science (CEERS) survey: The colour evolution of galaxies in the distant Universe," MNRAS submitted.
9. Finkelstein et al., "The Complete CEERS Early Universe Galaxy Sample: A Surprisingly Slow Evolution of the Space Density of Bright Galaxies at $z \sim 8.5 - 14.5$, ApJ submitted.

RECENT TALKS:	Date	Location	Date	Location	Date
NASA HWO SIG	2/7/24	UW Madison[υ]	10/26/20	NAOJ	10/10/17
UTokyo	11/13/23	Sharif[υ]	9/20/20	IPMU	10/3/17
Waseda U.	10/23/23	KITP*[υ]	8/6/20	Leiden*	9/8/17
Porto Ercole*	9/28/23	UWaterloo[υ]	5/20/20	MIAPP	7/18/17
Nagoya*	9/1/23	UCSD	11/13/19	Rome	7/6/17
Google	8/24/23	SLAC	5/1/19	Arcetri	6/29/17
UCSC	8/8/23	UArizona	4/14/19	IAP (Paris)	6/15/17
IAP (Paris)	6/22/23	Sierra Vista†	3/22/19	ENS (Paris)*	6/13/17
Arcetri	6/1/23	Sydney*	2/22/19	KITP*	5/17/17
SLAC	5/4/23	UArizona†	10/29/18	Stanford	4/3/17
KITP	3/22/23	Caltech*	10/19/18	CCA (New York)	3/22/17
NAOJ	10/14/22	Berkeley	10/8/18	UFlorida*	3/16/17
Kyoto U.	10/7/22	McGill	9/18/18	STScI*	3/15/17
Nagoya U.	8/4/22	UCSC	8/9/18	UArizona	2/9/17
UCDavis[υ]	5/19/22	UArizona†	5/17/18	Sexten*	1/18/17
UCSC[υ]	3/7/22	UTokyo	4/19/18	Obergurgl*	1/15/17
UWaterloo[υ]	1/26/22	JPL	2/1/18	IPMU	12/15/16
UGroningen[υ]	11/1/21	Berkeley*	1/10/18	Kyoto	12/5/16
UCLA[υ]	10/6/21	UCSC	1/8/18	Hiroshima*	11/29/16
UArizona[υ]	11/13/20	Fermilab	11/13/17	Harvard	10/11/16

**Invited Conference/Workshop Talk.* *†Public Talk.* *[υ]Virtual Talk.*

Public Service & Outreach:

STEM Faculty Lead for the Warrior-Scholar Project, UA chapter (2018–2020).

Author of the open-source UniverseMachine galaxy formation model, Rockstar halo finder, Consistent Trees merger tree code, & NDRedshift number density evolution code.

Referee for *ApJ* (2011–), *MNRAS* (2013–), *Comp. Astro. & Cosmo.* (2014–), *A&A* (2015–), and *Nature* (2015–).

Review panel member for NSF (2016-); NASA Postdoctoral Program (2014–) and NESSF (2016–); Hubble Telescope Allocation Committee (2020–), Dutch Research Council (2020–).

Scientific organizing committee for *Galaxy Formation and Evolution in the Data Science Era* (2023); *Galaxy Formation and Evolution in the Era of WFIRST* (2020); *Art of Measuring Galaxy Physical Properties* (2019); *A decade of the star-forming main sequence* (2017); *Exploring the Universe with JWST – II* (2016); *KIPAC@10* (2013).

Member of the DESI, CEERS, and CANDELS collaborations; core team member for the *ATLAS* Probe.

Press/Film:

"Machine learning reveals how black holes grow," (2022) covered at Phys.org.

"Virtual 'Universe Machine' Sheds Light on Galaxy Evolution" (2019), covered in *Popular Mechanics*, *Space.com*, *Science Daily*, etc.

"Most Earth-Like Worlds Have Yet to Be Born" (2015), covered in The *Atlantic*, *New Scientist*, *Washington Post*, *The John Batchelor Show*, *Christian Science Monitor*, *Discovery News*, *Daily Mail*, *Independent*, etc.

Interviewed in Streetlights of the Universe (2018), a film about the DESI project.

Departmental/University Service:

Colloquium Committee (2017–2020), Graduate Admissions Committee (2017–2019), Prize Theory Fellowship Committee (2017), Diversity & Inclusion Committee (2018-present; Chair 2021–2023), Written Prelim Committee (2018–2020), Academic Program Committee (2022–2023), University High Performance Computing Purchase Committee (2019). Mentoring/Prelim/PhD Committees (*21 students* since 2017).

Honors and Grants Received:

PI NASA ATP Grant ($575k)	2024–2027
Clarivate Highly Cited Researcher	2021, 2023
Co-I DOE AI Research for HEP Grant ($343k)	2022–2025
2019 Packard Fellowship ($875K)	2019–2024
PI Hubble Legacy Theory Grant (Cycle 26; ~$240K)	2019–2022
Co-I LRZ Supercomputing Grant (25M CPU hours)	2016
PI NASA Pleiades Supercomputing Grant (1.2M CPU hours)	2016–2017
Hubble Fellowship (2015-2018)	2015
Centre for Cosmological Studies Travel Grant	2015
Giacconi Fellowship (2013-2016)	2013
Co-I Hubble Theory Grant (Cycle 21)	2013
Co-I Hubble Theory Grant (Cycle 20)	2012
Co-I Hubble Theory Grant (Cycle 18)	2010
ARCS Scholar	2010
Member of the U.S. Physics Team	2002
Siemens-Westinghouse Science Talent Search National Finalist	2001

Research Mentees Supervised/Co-supervised:

Suchetha Cooray	NAOJ → Stanford	Postdoc	2023–2024
Moka Nishigaki	NAOJ/Sokendai	Graduate	2023–present
Elaheh Hayati	UArizona	Graduate	2020-present
Haley Bowden	UArizona	Graduate	2020–present
Spencer Scott	UArizona → Industry	Graduate	2019–2022
Haowen Zhang	UArizona	Graduate	2018-present
Christine O'Donnell	UArizona → ASU, APS	Graduate	2018-2020
Ryan Endsley	UArizona → UT Austin	Graduate	2017–2020
Oddisey Knox	UArizona	Undergrad	2020-present
Aidan DeBrae	UArizona → Industry	Undergrad	2020-present
Magdelena Allen†	Berkeley → MIT	Undergrad	2017-2019
Nick Choksi†	Berkeley → Berkeley	Undergrad	2016-2017

†NSF Graduate Research Fellow.

Teaching Experience:

ASTR 300A	Dynamics of Astrophysics	Spr. 23	UArizona
ASTR 300A	Dynamics of Astrophysics	Spr. 22	UArizona
ASTR 300A	Dynamics of Astrophysics	Fall 20	UArizona
ASTR 201	Cosmology	Spr. 20	UArizona
ASTR 201	Cosmology	Spr. 19	UArizona
ASTR 540	Structure & Dynamics of Galaxies	Fall 18	UArizona

PATENTS:

Reliable determination of contact angle of sessile drops	#11,668,635	2023
Characterizing transmission of access nodes within a wireless network	#8,493,945	2013
Characterizing uncoordinated interference of a wireless network	#8,559,407	2013
Mitigation of uncoordinated interference of a wireless access node	#8,606,187	2013

REFERENCES (ALPHABETICAL ORDER):

Tom Abel	Professor, Stanford University	tabel@slac.stanford.edu
Richard Bower	Professor, Durham University	r.g.bower@durham.ac.uk
Darren Croton	Professor, Swinburne University	dcroton@swin.edu.au
Avishai Dekel	Professor, Hebrew University	avishai.dekel@mail.huji.ac.il
Sandra Faber	Professor, UC Santa Cruz†	faber@ucolick.org
Lars Hernquist	Professor, Harvard University	lhernquist@cfa.harvard.edu
John Kormendy	Professor, UT Austin†	kormendy@astro.as.utexas.edu
Andrey Kravtsov	Professor, U. of Chicago	andrey@oddjob.uchicago.edu
Joel Primack	Professor, UC Santa Cruz†	joel@ucsc.edu
Eliot Quataert	Professor, Princeton University	eliot@princeton.edu
Joseph Silk	Professor, IAP / JHU	silk@iap.fr
Rachel Somerville	Group Leader, CCA	rsomerville@flatironinstitute.org
Risa Wechsler	Professor, Stanford University	rwechsler@stanford.edu

†: Emeritus / Emerita.