

Areas of Expertise

Galaxy evolution, chemical evolution, the circumgalactic medium, how galaxies process their gas
Hydrodynamic simulations, synthetic data, semi-empirical models, coupling theory with observations

Positions Held

- AURA Associate Astronomer 2017 – present
 - Science Policies Group Member 2016 – present
 - WFIRST Team Member 2014 – present
- AURA Assistant Astronomer 2014 – 2017
 - COS/STIS Instrument Scientist 2014 – 2016
- Associate Research Scientist, Johns Hopkins University 2015 – present
- Postdoctoral Fellow, Space Telescope Science Institute 2013 – 2014
- Southern California Center for Galaxy Evolution Fellow, UC Los Angeles 2010 – 2013
- Graduate Research Associate, The Ohio State University 2005 – 2010
- Undergraduate Researcher, California Institute of Technology; with Richard Massey, Jason Rhodes, and Richard Ellis 2004 – 2005
- Undergraduate Researcher, Massachusetts Institute of Technology 2003 – 2005

Education

- Ph.D. **2010, Astronomy, The Ohio State University.** Dissertation advisor: David Weinberg.
Other advisors: Krzysztof Stanek, Richard Pogge, Paul Martini.
Dissertation title: *From Galaxies to the Intergalactic Medium*
- M.S. **2007, Astronomy, The Ohio State University.**
- S.B. **2005, Physics, Massachusetts Institute of Technology.** Thesis advisor: Paul Schechter.
Thesis title: *Gravitationally lensed image simulations for the study of the substructure in galaxy clusters*

Highlights

- **Eleven first-author** and thirty-six total **refereed publications** since 2006; over 2500 citations, $h=22$, nine publications with over 100 citations. Given over **fifty invited talks and colloquia** since 2009.
- PI of **over \$1.6 million in grants**, including an NSF Astronomy & Astrophysics Research Grant and a NASA Astrophysics Theory Program Grant. Co-I on sixteen successful Cycles 20–25 HST proposals (total of 326 orbits, plus five archival), including one archival theory proposal as PI.
- PI or co-I for competitively-awarded time of **over 33 million core-hours** on national high-performance supercomputing facilities (~\$250,000 equivalent).
- *Wide-Field InfraRed Survey Telescope* Wide Field Imager Simulations Working Group Co-chair, 2016–present
- Co-creator of the Hubble Spectroscopic Legacy Archive, a science-ready compilation of all publicly available COS/FUV data
- Science Organizing Committee member for **eight international conferences** since 2012, including **three as chair or co-chair**

Selected Grants Received

- PI, NASA Astrophysics Theory Program, 17-ATP17-0169, \$705,575, “Figuring Out Gas & Galaxies in Enzo (FOGGIE): The Gas-Galaxy Connection at $z > 2$ ” 2018
- Co-I, HST Proposal ID #15020 (PI: A. Fox), Cycle 25, Archival Proposal, “The Mass Outflow Rate of the Milky Way” 2017
- Co-I, HST Proposal ID #15012 (PI: L. Corlies), \$141,449, Cycle 25, Archival Theory Proposal, “Resolving the Small-Scale Structure of the Circumgalactic Medium in Cosmological Simulations” 2017
- Admin PI, HST Proposal ID #14560 (PI: N. Earl), Cycle 24, Archival Proposal, “Diagnosing the Multiphase Circumgalactic Medium” 2016
- PI, NSF AST-1517908, \$833,170 over four institutions, “Collaborative Research: Multiscale Physics and Feedback in Real and Simulated Circumgalactic Gas Over Cosmic Time” 2015
- Co-I, STScI Admin PI, HST Proposal ID #14268, Cycle 23 (\$73,207, PI: N. Lehner), “Project AMIGA: Mapping the Circumgalactic Medium of Andromeda” 2015
- PI, HST Proposal ID #13919, Cycle 22, Archival Theory Proposal (\$115,246), “MAST Interface to Synthetic Telescopes with yt (MISTY): Observing Simulations of the Intergalactic Medium” 2014
- Co-I, STScI Admin PI, HST Proposal ID #13275 (PI: J. K. Werk), Archival Proposal, “The Skeleton in the Closet: Testing the Effect of HII Region Self-Enrichment Using Archival STIS Data” 2013

Computing Allocations

- PI, NCSA Blue Waters, 200,000 Node Hours, “Figuring Out Gas & Galaxies in Enzo (FOGGIE): Galaxy Evolution in a Resolved Intergalactic Medium” (\$80,000 equivalent) 2018
- PI, NASA HEC-SMD-17-1233, 527,814 Service Units thus far on NASA’s Pleiades, “Figuring Out Gas & Galaxies in Enzo (FOGGIE): The Gas-Galaxy Connection at $z > 2$ ” (\$84,450.24 equivalent) 2018
- Co-I, NASA HEC-SMD-17-1445 (PI: L. Corlies), 485,264 Service Units on NASA’s Pleiades, “Resolving the Small-Scale Structure of the Circumgalactic Medium in Cosmological Simulations” (\$77,642.24 equivalent) 2017
- Co-PI, XSEDE #AST170022 (PI: L. Corlies), 40,106 Node Hours on TACC’s Stampede2 (\$11,673 equivalent), “Figuring Out Gas & Galaxies in Enzo (FOGGIE): Resolving the Small-Scale Structure of Gas Flows in the Circumgalactic Medium” 2017
- PI, XSEDE startup allocation, TACC’s Stampede, “Figuring Out Gas & Galaxies in Enzo (FOGGIE): High-resolution simulations of the evolving circumgalactic medium” 2017

Selected Observing Programs

- Co-I, HST Proposal ID #15161, (PI: K. Barger) Cycle 25, 7 orbits, “The fate of infalling gas during its final approach onto the Milky Way disk” 2017
- Co-I, HST Proposal ID #15075, (PI: J. C. Howk) Cycle 25, 45 orbits, “The CGM of Massive Galaxies: Where Cold Gas Goes to Die?” 2017
- Co-I, HST Proposal ID #14268, (PI: N. Lehner) Cycle 23, 93 orbits, “Project AMIGA: Mapping the Circumgalactic Medium of Andromeda” 2015
- Co-I, HST Proposal ID #13851, (PI: R. Bordalo) Cycle 22, 34 orbits, “How Galaxy Mergers Affect Their Environment: Mapping the Multiphase Circumgalactic Medium of Close Kinematic Pairs” 2014
- Co-I, HST Proposal ID #13033 (PI: J. Tumlinson), Cycle 20, 14 orbits, “COS-Halos: New FUV Measurements of Baryons and Metals in the Inner Circumgalactic Medium” 2012

Mentoring Activities

- Raymond Simons, Johns Hopkins University postdoctoral researcher; now Space Telescope Science Institute Giacconi Fellow 2018–present
- Lauren Corlies, Johns Hopkins University postdoctoral researcher (currently an LSST Education & Public Outreach Scientist) 2016–2018
- Nicholas Earl, STScI Research & Instrumentation Analyst and Software Engineer 2015–present
- Melissa Morris, University of Texas at Austin undergraduate (currently a graduate student in astronomy at the University of Wisconsin, Madison), STScI Space Astronomy Summer Program intern 2017
- Sean Fillingham, UCLA undergraduate (currently a graduate student in astronomy at UC Irvine), summer REU and senior project 2012–2013
- Jennifer Kadowaki, UCLA undergraduate (currently a graduate student in astronomy at the University of Arizona), single quarter research project 2011

Primary Refereed Publications

* indicates paper led by postdoc I mentored; † indicates >100 citations

1. FIGURING OUT GAS & GALAXIES IN ENZO (FOGGIE). II. EMISSION FROM THE $Z=3$ CIRCUMGALACTIC MEDIUM

*L. Corlies, M. S. Peeples, J. Tumlinson, B. W. O’Shea, N. Lehner, J. C. Howk, & J. M. O’Meara (2019) ApJ, under review, arXiv:1811.05060

2. FIGURING OUT GAS & GALAXIES IN ENZO (FOGGIE). I. RESOLVING SIMULATED CIRCUMGALACTIC ABSORPTION AT $2 \lesssim Z \lesssim 2.5$

M. S. Peeples, L. Corlies, J. Tumlinson, B. W. O’Shea, N. Lehner, J. M. O’Meara, J. C. Howk, N. Earl, B. D. Smith, J. H. Wise, & C. B. Hummels (2019) ApJ, 873, 129

Primary Refereed Publications, Continued

3. [★THE CIRCUMGALACTIC MEDIUM](#)

J. Tumlinson, **M. S. Peeples**, & J. K. Werk (2017) ARA&A, 55, 389

4. ON THE HISTORY AND FUTURE OF COSMIC PLANET FORMATION

P. Behroozi & **M. S. Peeples** (2015) MNRAS, 454, 1811

5. EVOLUTION OF THE ATOMIC AND MOLECULAR GAS CONTENT OF GALAXIES IN DARK MATTER HALOES

G. Popping, P. Behroozi, & **M. S. Peeples** (2015), MNRAS, 449, 477

6. A FRAMEWORK FOR EMPIRICAL GALAXY PHENOMENOLOGY: THE SCATTER IN GALAXY AGES AND STELLAR METALLICITIES

J. A. Muñoz & **M. S. Peeples** (2015), MNRAS, 448, 1430

7. [★THE COS-DWARFS SURVEY: THE CARBON RESERVOIR AROUND SUB-L* GALAXIES](#)

R. Bordoloi, J. Tumlinson, J. K. Werk, B. D. Oppenheimer, **M. S. Peeples**, J. X. Prochaska, T. M. Tripp, N. S. Katz, R. Davé, A. J. Fox, C. Thom, A. B. Ford, D. H. Weinberg, J. N. Burchett, & J. A. Kollmeier (2014) ApJ, 448, 1430

8. [★THE COS-HALOS SURVEY: PHYSICAL CONDITIONS AND BARYONIC MASS IN THE LOW-REDSHIFT CIRCUMGALACTIC MEDIUM](#)

J. K. Werk, J. Tumlinson, J. X. Prochaska, **M. S. Peeples**, T. M. Tripp, A. J. Fox, N. Lehner, C. Thom, J. M. O'Meara, A. B. Ford, R. Bordoloi, N. S. Katz, N. Tejos, B. D. Oppenheimer, R. Davé, & D. H. Weinberg (2014) ApJ, 792, 8

9. [★A BUDGET AND ACCOUNTING OF METALS AT \$z \sim 0\$: RESULTS FROM THE COS-HALOS SURVEY](#)

M. S. Peeples, J. K. Werk, J. Tumlinson, B. D. Oppenheimer, J. X. Prochaska, & N. S. Katz (2014) ApJ, 768, 54

10. AN EMPIRICAL PREDICTION FOR STELLAR METALLICITY DISTRIBUTIONS IN NEARBY GALAXIES

M. S. Peeples & R. S. Somerville (2013) MNRAS, 428, 1766

11. NOT DEAD YET: COOL CIRCUMGALACTIC GAS IN THE HALOS OF EARLY TYPE GALAXIES

C. Thom, J. Tumlinson, J. K. Werk, J. X. Prochaska, B. D. Oppenheimer, **M. S. Peeples**, T. M. Tripp, N. S. Katz, J. M. O'Meara, A. B. Ford, R. Davé, K. R. Sembach, & D. H. Weinberg (2012) ApJL, 758, 41

12. [★THE LARGE, OXYGEN-RICH HALOS OF STAR-FORMING GALAXIES: A MAJOR RESERVOIR OF GALACTIC METALS](#)

J. Tumlinson, C. Thom, J. K. Werk, J. X. Prochaska, T. M. Tripp, D. H. Weinberg, **M. S. Peeples**, J. M. O'Meara, B. D. Oppenheimer, J. D. Meiring, N. S. Katz, R. Davé, A. B. Ford, & K. R. Sembach (2011) Science, 334, 948

Primary Refereed Publications, Continued

13. ✦ CONSTRAINTS ON STAR FORMATION DRIVEN GALAXY WINDS FROM THE MASS-METALLICITY RELATION AT $Z=0$
M. S. Peeples & F. Shankar (2011) MNRAS, 417, 2962
14. PRESSURE SUPPORT VS. THERMAL BROADENING IN THE LYMAN-A FOREST I: EFFECTS OF THE EQUATION OF STATE ON LONGITUDINAL STRUCTURE
M. S. Peeples, D. H. Weinberg, R. Davé, M. A. Fardal, & N. S. Katz (2010) MNRAS, 404, 1281
15. PRESSURE SUPPORT VS. THERMAL BROADENING IN THE LYMAN-A FOREST II: EFFECTS OF THE EQUATION OF STATE ON TRANSVERSE STRUCTURE
M. S. Peeples, D. H. Weinberg, R. Davé, M. A. Fardal, & N. S. Katz (2010) MNRAS, 404, 1295
16. OUTLIERS FROM THE MASS-METALLICITY RELATION II: A SAMPLE OF MASSIVE METAL-POOR GALAXIES FROM SDSS
M. S. Peeples, R. W. Pogge, & K. Z. Stanek (2009) ApJ, 695, 259
17. OUTLIERS FROM THE MASS-METALLICITY RELATION I: A SAMPLE OF METAL-RICH DWARF GALAXIES FROM SDSS
M. S. Peeples, R. W. Pogge, & K. Z. Stanek (2008) ApJ, 685, 904
18. A STUDY OF STELLAR PHOTOMETRIC VARIABILITY WITHIN THE CENTRAL 4 PC OF THE GALACTIC CENTER WITH INFRARED IMAGE SUBTRACTION
M. S. Peeples, K. Z. Stanek, & D. L. DePoy (2007) AcA, 57, 173
19. THE NATURE OF THE VARIABLE GALACTIC CENTER SOURCE GCIRS 16SW REVISITED: A MASSIVE ECLIPSING BINARY
M. S. Peeples, A. Z. Bonanos, D. L. DePoy, K. Z. Stanek, J. Pepper, R. W. Pogge, M. H. Pinsonneault, & K. Sellgren (2007) ApJL, 654, 61
20. THE CONNECTION BETWEEN BARSTRENGTH AND CIRCUMNUCLEAR DUST STRUCTURE
M. S. Peeples & P. Martini (2006) ApJ, 652, 1097

Other Refereed Publications

21. THE RED DEAD REDEMPTION SURVEY OF CIRCUMGALACTIC GAS ABOUT MASSIVE GALAXIES. I. MASS AND METALLICITY OF THE COOL PHASE
M. A. Berg, J. C. Howk, N. Lehner, C. B. Wotta, J. M. O'Meara, D. V. Bowen, J. N. Burchett, **M. S. Peeples**, & N. Tejos (2018), ApJ, submitted, arXiv:1811.10717
22. THE ROBUSTNESS OF COSMOLOGICAL HYDRODYNAMIC SIMULATION PREDICTIONS TO CHANGES IN NUMERICS AND COOLING PHYSICS
S. Huang and 11 co-authors, including **M. S. Peeples** (2019) MNRAS, 484, 2021

Other Refereed Publications, Continued

23. THE COS ABSORPTION SURVEY OF BARYON HARBORS: WARM-HOT CIRCUMGALACTIC GAS RESERVOIRS TRACED BY NE VIII

J. N. Burchett and 14 co-authors, including **M. S. Peeples** (2019) *ApJL*, in press, arXiv:1810.06560

24. PROJECT AMIGA: DISTANCE AND METALLICITY GRADIENTS ALONG ANDROMEDA'S GIANT SOUTHERN STREAM FROM THE RED CLUMP

R. E. Cohen, J. Kalirai, K. M. Gilbert, P. Guhathakurta, **M. S. Peeples**, N. Lehner, T. M. Brown, L. Bianchi, K. A. Barger, & J. M. O'Meara (2018) *AJ*, 156, 230

25. PROJECT AMIGA: A MINIMAL COVERING FACTOR FOR OPTICALLY THICK CIRCUMGALACTIC GAS AROUND ANDROMEDA

J. C. Howk and 20 co-authors, including **M. S. Peeples** (2017) *ApJ*, 846, 141

26. THE SECOND DATA RELEASE OF THE KODIAQ SURVEY

J. M. O'Meara, J. C. Howk, J. X. Prochaska, A. J. Fox, **M. S. Peeples**, J. Tumlinson, & B. W. O'Shea (2017) *AJ*, 54, 114

27. THE COS-HALOS SURVEY: METALLICITIES IN THE LOW-REDSHIFT CIRCUMGALACTIC MEDIUM

J. X. Prochaska, J. K. Werk, Worseck, T. M. Tripp, J. Tumlinson, J. N. Burchett, A. J. Fox, Fumagalli, N. Lehner, **M. S. Peeples**, & Tejos (2017), *ApJ*, 837, 169

28. BARYON CYCLING IN THE LOW-REDSHIFT CIRCUMGALACTIC MEDIUM: A COMPARISON OF SIMULATIONS TO THE COS-HALOS SURVEY

A. B. Ford, J. K. Werk, J. Tumlinson, R. Bordoloi, N. S. Katz, J. A. Kollmeier, B. D. Oppenheimer, **M. S. Peeples**, J. X. Prochaska, & D. H. Weinberg (2016), *MNRAS*, 459, 1745

29. THE RELATIONSHIP BETWEEN STELLAR MASS, GAS METALLICITY, AND STAR FORMATION RATE FOR H- α SELECTED GALAXIES AT $z \sim 0.8$ FROM THE NEW H α SURVEY

M. A. de los Reyes, C. Ly, J. C. Lee, S. Salim, **M. S. Peeples**, I. Momcheva, J. Fedderson, D. A. Dale, M. Ouchi, Y. Ono, & R. Finn (2015) *AJ*, 149, 79

30. THE PHOTON UNDERPRODUCTION CRISIS

J. A. Kollmeier, D. H. Weinberg, B. D. Oppenheimer, Haardt, N. S. Katz, R. Davé, Fardal, Madau, Danforth, A. B. Ford, **M. S. Peeples**, McEwan (2014) *ApJ*, 789, 32

31. \star THE COS-HALOS SURVEY: RATIONALE, DESIGN, AND A CENSUS OF CIRCUMGALACTIC NEUTRAL HYDROGEN

J. Tumlinson, C. Thom, J. K. Werk, J. X. Prochaska, T. M. Tripp, R. Davé, B. D. Oppenheimer, N. S. Katz, J. D. Meiring, A. B. Ford, J. M. O'Meara, **M. S. Peeples**, K. R. Sembach, & D. H. Weinberg (2013) *ApJ*, 777, 59

Other Refereed Publications, Continued

32. THE COS-HALOS SURVEY: AN EMPIRICAL DESCRIPTION OF THE METAL-LINE ABSORPTION IN THE LOW-REDSHIFT CIRCUMGALACTIC MEDIUM
J. K. Werk, J. X. Prochaska, C. Thom, J. Tumlinson, T. M. Tripp, J. M. O'Meara, & **M. S. Peeples** (2012) *ApJS*, 204, 17
33. ✦THE SHEAR TESTING PROGRAMME 2: FACTORS AFFECTING HIGH PRECISION WEAK LENSING ANALYSES
R. Massey and 30 co-authors including **M. S. Peeples** (2007) *MNRAS*, 376, 13

These are publications for which I contributed observations from queue observing on the MDM 2.4-m:

34. VARIABILITY AND STABILITY IN BLAZAR JETS ON TIME-SCALES OF YEARS: OPTICAL POLARIZATION MONITORING OF OJ 287 IN 2005-2009
C. Villforth and 47 co-authors, including **M. S. Peeples** (2010) *MNRAS*, 402, 2087
35. TIDALLY INDUCED OUTBURSTS IN OJ 287 DURING 2005-2008
M. J. Valtonen and 40 co-authors, including **M. S. Peeples** (2009) *ApJ*, 698, 781
36. THE MASS OF THE BLACK HOLE IN THE QUASAR PG 2130+099
C. J. Grier and 16 co-authors, including **M. S. Peeples** (2008) *ApJ*, 688, 837

First Author Unrefereed Publications, White Papers, and Instrument Science Reports

37. UNDERSTANDING THE CIRCUMGALACTIC MEDIUM IS CRITICAL FOR UNDERSTANDING GALAXY EVOLUTION
M. S. Peeples and 71 co-authors (2019) arXiv:1903:05644; an Astro2020 Decadal Survey White Paper
38. THE FADING OF THE STIS ULTRAVIOLET CALIBRATION LAMPS
M. S. Peeples (2017) Space Telescope Imaging Spectrograph Instrument Science Report, STIS ISR 2017-04
39. THE HUBBLE SPECTROSCOPIC LEGACY ARCHIVE
M. S. Peeples, J. Tumlinson, A. Fox, A. Aloisi, S. Fleming, R. Jedrzejewski, C. Oliveira, T. Ayres, C. Danforth, B. Keeney, & E. Jenkins (2017) Cosmic Origins Spectrograph Instrument Science Report, COS ISR 2017-04
40. THE NEED FOR A ROBUST WFIRST WIDE FIELD IMAGER DATA SIMULATOR
M. S. Peeples, B. S. Gaudi, M. Jarvis, R. Hounsell, R. Khan, S. Malhotra, J. E. G. Peek, M. Penny, G. F. Snyder, R. Street, H. Teplitz, B. Williams, J. C. Yee (2017) WFIRST White Paper
41. MOCKING THE UNIVERSE: BETTER SCIENCE THROUGH DATA SIMULATION
M. S. Peeples (2015) STScI Newsletter article, Volume 32, Issue 2
42. METALS: NATURE'S TRACER PARTICLES
M. S. Peeples (2015) STScI Newsletter article, Volume 32, Issue 1
43. COSMIC FOG AND SMOG
M. S. Peeples (2015) *Nature* 517, 444; solicited News & Views article

Other Unrefereed Publications, White Papers, and Instrument Science Reports

44. EMISSION LINE MAPPING OF THE CIRCUMGALACTIC MEDIUM OF NEARBY GALAXIES
D. Zaritsky, P. Behroozi, **M. S. Peeples**, S. Tuttle, J. K. Werk, & H. Zhang (2019) arXiv:1904.06398; an Astro2020 Decadal Survey White Paper
45. ASTRO2020 SCIENCE WHITE PAPER: CONSTRUCTION OF AN L^* GALAXY: THE TRANSFORMATIVE POWER OF WIDE FIELDS FOR REVEALING THE PAST, PRESENT AND FUTURE OF THE GREAT ANDROMEDA SYSTEM
K. M. Gilbert, E. J. Tollerud, and 35 co-authors, including **M. S. Peeples** (2019) arXiv:1904.01074; an Astro2020 Decadal Survey White Paper
46. THE PANCHROMATIC CIRCUMGALACTIC MEDIUM
Q. D. Wang, J. N. Burchett, N. Lehner, J. M. O'Meara, **M. S. Peeples**, J. E. G. Peek, M. Rafelski, J. Tumlinson, Werk, & D. Zaritsky (2019) arXiv: 1903.10649; an Astro2020 Decadal Survey White Paper
47. FOLLOWING THE METALS IN THE INTERGALACTIC AND CIRCUMGALACTIC MEDIUM OVER COSMIC TIME
N. Lehner, J. N. Burchett, J. C. Howk, J. M. O'Meara, **M. S. Peeples**, M. Rafelski, J. Ribaldo, & S. Tuttle (2019) arXiv:1903.07636; an Astro2020 Decadal Survey White Paper
48. ASTRO2020 SCIENCE WHITE PAPER: SPATIALLY RESOLVED UV NEBULAR DIAGNOSTICS IN STAR-FORMING GALAXIES
B. James, D. Berg, and 17 co-authors, including **M. S. Peeples** (2019) arXiv:1903.06678; an Astro2020 Decadal Survey White Paper
49. ULTRAVIOLET PERSPECTIVES ON DIFFUSE GAS IN THE LARGEST COSMIC STRUCTURES
J. N. Burchett and 33 co-authors, including **M. S. Peeples** (2019) arXiv:1903.06201; an Astro2020 Decadal Survey White Paper
50. AN ULTRA DEEP FIELD SURVEY WITH WFIRST
A. Koekemoer and 71 co-authors, including **M. S. Peeples** (2019) arXiv:1903.05644; an Astro2020 Decadal Survey White Paper
51. THE WIDE FIELD INFRARED SURVEY TELESCOPE: 100 HUBBLES FOR THE 2020S
R. Akeson and 105 co-authors, including **M. S. Peeples** (2019) arXiv:1902.05569
52. CHANGES TO THE COS EXTRACTION ALGORITHM FOR LIFETIME POSITION 3
C. Proffitt and 17 co-authors, including **M. S. Peeples** (2015) Cosmic Origins Spectrograph Instrument Science Report, COS ISR 2015-03

Selected Service and Professional Activities

- NASA Astrophysics Data Analysis Program Panel Reviewer 2018
- Participant, Alan Alda Science Communication Workshop; Baltimore, MD 2017
- NASA Astrophysics Theory Program Panel Reviewer 2016
- *Wide-Field InfraRed Survey Telescope* Science Investigation Teams Panel Reviewer 2015
- National Science Foundation Astronomy and Astrophysics Research Grants Panel Reviewer 2014
- *Hubble Space Telescope* Time Allocation Panel Member, Cycle 20 2012

Press Releases and Publicity

- “The ecosystem that controls a galaxy’s future is coming into focus”, ScienceNews cover story by Lisa Grossman on the circumgalactic medium, based on the Tumlinson, Peeples, & Werk (2017) ARA&A article and the FOGGIE simulations, featuring several quotes from me: 2018
<https://www.sciencenews.org/article/cosmic-cloak-controls-galaxy-future-coming-focus>
- “Most Earth-Like Worlds Yet To Be Born, According to Theoretical Study”, press release based on Behroozi & Peeples (2015) MNRAS article, “On The History and Future of Cosmic Planet Formation”; spawned articles in New Scientist, Science Daily, The Huffington Post, Cosmos Magazine, etc. http://hubblesite.org/news_release/news/2015-35/1-planets 2015
- “The mystery of the dead galaxies”, Science Magazine article by Ann Finkbeiner on the circumgalactic medium of galaxies that are no longer forming stars, prominently featuring several quotes from me: <http://science.sciencemag.org/content/346/6212/905> 2014

International Conferences Organized

- Science Organizing Committee member for 5th Annual GMT Community Science Meeting, “Chemical Evolution of the Universe”, held in Tarrytown, NY 2017
- **Co-Chair**, Science Organizing Committee for “**Astronomy in the 2020s: Synergies with WFIRST**”, a WFIRST/STScI conference with over 100 participants; Baltimore, MD 2017
- Science Organizing Committee member for “Forging Connections: From Nuclei to the Cosmic Web”; East Lansing, MI 2017
- Science Organizing Committee member for “Detecting the Unexpected: Discovery in the Era of Astronomically Big Data”, an STScI workshop; Baltimore, MD 2017
- Science Organizing Committee member for “What Shapes Galaxies?”, an STScI symposium on the physical processes shaping galaxies; Baltimore, MD 2016
- **Chair**, Science Organizing Committee for “**Mocking the Universe: Better Science Through Data Simulation**”, an STScI workshop on preparing for and learning from future and current surveys and observing facilities; Baltimore, MD 2015
- Science Organizing Committee member for The Near-Field Deep-Field Connection, a meeting on the interface of local relics and the first galaxies; Irvine, CA 2014
- **Co-chair**, Organizing Committee for “**The Baryon Cycle**”, an international meeting with 130 participants, on galaxy outflows, inflows, and the circumgalactic medium; Irvine, CA 2012

Selected Invited Colloquia, Seminars, and Presentations

- Charles University, Prague, The Czech Republic; Institute of Theoretical Physics Seminar 2019
- Joint National Optical Astronomical Observatory and University of Arizona Astronomy Department Colloquium 2019
- American Museum of Natural History Astrophysics Seminar 2018
- Warm and Hot Baryonic Matter in the Cosmos, a Focus Meeting at the 30th IAU General Assembly; Vienna, Austria; Invited Review Talk: “The Multiphase Circumgalactic Medium” 2018
- The Near, The Far, and the In-between: Synergy between low and high redshift galaxy evolution studies in the era of *JWST* and *Euclid*; Invited Review Talk: “The Circumgalactic Medium” 2018
- A Star Was Born: A conference celebrating the scientific achievements of Mike Dopita, Abbazia di Spineto, Italy; Invited Talk: “Figuring Out Gas & Galaxies In Enzo” 2018
- Joint National Radio Astronomical Observatory and University of Virginia Astronomy Department Colloquium 2017
- A Decade of the Star-Forming Main Sequence; Leiden, The Netherlands; Invited Talk: “The Role of the Star-Forming Main Sequence for Chemical Evolution Models” 2017
- The Circle of Life: Connecting the Intergalactic, Circumgalactic, and Interstellar Media; Kruger Park, South Africa; Invited Talk: “The Simulated Circumgalactic Medium: FOGGIE, MISTY, and other Cloudy matters” 2017
- The Ohio State University Astronomy Colloquium 2016
- *JWST* at the Royal Edinburgh Observatory; Invited Talk: “The Evolution of Metals” 2016
- University of Maryland Astronomy Colloquium 2016
- University of Pennsylvania Astrophysics Colloquium 2016
- Southern Cross Astrophysics Conference Series VIII: Multiwavelength Dissection of Galaxies; Sydney, Australia; Invited Talk: “The Circumgalactic Medium” 2015
- Pennsylvania State University; Astronomy and Astrophysics Colloquium 2014
- Carnegie Observatories; Seminar 2014
- Rutgers, The State University of New Jersey; Astrophysics Colloquium 2014
- Goddard Space Flight Center; Stellar & Extragalactic Astronomy Lunch 2014
- New Mexico State University; Astronomy Seminar 2013
- Australia National University; Research School of Astronomy & Astrophysics Colloquium 2013
- Swinburne University; Astrophysics Colloquium 2013
- University of Michigan; Astronomy Colloquium 2013
- Michigan State University; Astrophysics Seminar 2013
- University of Notre Dame; Astrophysics Seminar 2013
- UC Santa Cruz; Astrophysics Seminar 2012
- UC San Diego; Center for Astrophysics and Space Sciences Seminar 2012
- Metals in Tuscany; Abbazia di Spineto, Italy; Invited Talk 2012

Outreach and Public Engagement

- Charles University, Prague, The Czech Republic; Invited Public Talk 2019
- Hanselminutes Technology Podcast guest 2019
<https://www.hanselminutes.com/674/how-galaxies-evolve-with-dr-molly-peeples>
- Guest Lecturer at the Research Science Institute, a pre-eminent international summer research program for high school students held at the Massachusetts Institute of Technology 2018
- Story Collider storyteller 2018
<https://www.storycollider.org/shows/2018/4/25/washington-dc>
- People Behind The Science podcast interview 2017
<http://www.peoplebehindthescience.com/dr-molly-peeples/>
- Helped staff the STScI exhibit at Artscape, a weekend-long free art festival in Baltimore, MD 2016
- Participated in three “Hubble Hangouts”, live-streamed interactive discussions on: “Mocking the Universe” and the importance of synthetic data; on how “Most Earth-like Planets Have Yet To Be Born”, a press release based on the Behroozi & Peeples (2015) paper; and on the Hubble Spectroscopic Legacy Archive and the importance of public data 2015 – 2016
- Center for Excellence in Education Teacher Enrichment Program Bite of Science presentation 2015
- Public Talk at The South Carolina State Museum on the occasion of the Grand Opening of their new astronomy wing, planetarium, and telescope collection 2014
- Family Night Public Talk at STScI 2014
- Helped staff the STScI booth at the May 2014 USA Science and Engineering Festival 2014

Selected Space Telescope Science Institute Service

- Science Recruitment Committee Member 2018 – 2019
- STScI Postdoc Mentoring Program Coordinator 2017 – present
- STScI Postdoc Hiring Coordination Committee Member 2017 – present
- Weekly Galaxy Journal Club staff sponsor 2014 – 2017
- Weekly Galaxy Journal Club organizer 2013 – 2014
- Giacconi and Lasker Fellowships Selection Committee Member 2017
- Giacconi Fellowship Selection Committee Member 2015
- STScI Science Evaluation Committee Member 2016
- STScI Science Research Support Advisory Committee Member 2016
- Space Telescope Science Institute HotSci Talk Committee Member 2014