	kotherine emily whitaker	
Contact Information	Department of Astronomy University of Massachusetts 710 North Pleasant Street Amherst, MA 01003 USAOffice: +1-413-545-3556 	.edu
Research Interests	Observational galaxy formation and evolution: quenching, ga morphology, star formation rate — stellar mass relation, spatially re stellar populations, spectroscopic ages, dust content, star formation	esolved
EDUCATION	 Ph.D. in Astronomy, Yale University (Awarded December 2012) Thesis: A Cosmic Metamorphosis: The Quenching of Star-form Massive Galaxies Over the Last Eleven Billion Years Advisor: Pieter G. van Dokkum M.S., M.Phil. in Astronomy, Yale University (May 2007, 2008) B.S. in Physics & Astronomy, Univ. of Massachusetts Amherst (M Summa cum Laude, with highest honors in the Commonwealth 	ay 2005)
Positions	NASA Hubble Fellow, University of Massachusetts AmherstCareer Break: Maternity Leave3/2NASA Postdoctoral Program Fellow, Goddard Space Flight Center	2023 — 2019-2023 2017 — 2016-2019 2017-8/2017 2013-5/2013 2012-2015 2010-2/2011 2006-2012 2005-2006 2004-2005 2003
Honors & Awards	1% Highest-Cited Scientist, Clarivate Analytics Lilly Fellowship in Teaching Excellence, UMass Amherst Alfred P. Sloan Foundation Fellowship Dirk Brouwer Memorial Prize, Yale University Mary Dailey Irvine Prize, Five College Astronomy Department Outstanding Undergraduate Award, UMass Amherst William F. Field Alumni Scholar, UMass Amherst Hasbrouck Scholarship Award, UMass Amherst	2021 2021 2019 2015 2005 2005 2004 2004
Colloquia & Invited Talk		C(5/2023)

- Colloquium, University of Arizona, Tucson AZ (3/2023)
- Colloquium, Texas A&M, College Station TX (1/2023)
- \bullet Invited Talk, JWST ISSI Workshop, Bern, Switzerland (1/2023)
- Colloquium, University of Toledo, Toledo OH (10/2022)
- Colloquium, University of Florida, Gainesville FL $\left(10/2022\right)$
- Invited Talk, DAWN Research Conference, Copenhagen, Denmark (June 2022)
- Colloquium, MIT, Cambridge MA (virtual, 2/2022)
- Invited Review Talk, "The Main of Star-forming Galaxies", EAS (virtual, 7/21)
- Colloquium, Space Telescope Science Institute (virtual, 5/2021)
- Colloquium, Queens University, Kingston Canada (virtual, 10/2020)
- Invited Talk, Subaru 20th Symposium, Waikaloa Beach, HI (11/2019)
- Invited Talk, ITC Battlestar Galactica Edition, Cambridge MA (4/2019)
- Colloquium, University of Massachusetts, Amherst MA (3/2019)
- Invited Talk, "Extremely Big Eyes on the Early Universe", UCLA, CA (1/2019)
- Invited Talk, "Massively Parallel Large Area Spectroscopy from Space", ATLAS Probe Community Workshop, Pasadena, CA (10/2018)
- \bullet Invited Talk, WFIRST Deep Fields Workshop, Princeton NJ (8/2018)
- Colloquium, Institute for Theoretical Astrophysics, Univ. of Oslo, NO (7/2018)
- Invited Talk, LUVOIR Seminar, Goddard Space Flight Center (5/2018)
- Invited Talk, Galaxy & Cosmology Seminar, CfA, Cambridge MA (2/2018)
- Invited Talk, WFIRST Session, 231st AAS Meeting, Washington DC (1/2018)
- Invited Talk, LUVOIR Session, 231st AAS Meeting, Washington DC (1/2018)
- Colloquium, Boston University, Boston MA (10/2017)
- Colloquium, Yale University, New Haven CT (9/2017)
- Invited Review Talk, Lorentz Center Workshop, Leiden NL (9/2017)
- Invited Talk, Hubble Fellows Symposium, Baltimore MD (3/2017)
- Colloquium, University of Kansas, Lawrence KS (3/2017)
- Colloquium, University of Connecticut, Storrs CT (3/2017)
- Colloquium, MIT, Cambridge MA $\left(2/2017\right)$
- Colloquium, Wesleyan University, Middletown, CT (11/2016)
- \bullet Invited Talk, Hubble Fellows Symposium, Baltimore, MD (3/2016)
- Colloquium, Penn State, State College, PA (2/2016)
- \bullet Colloquium, Amherst College, Amherst, MA (1/2016)
- \bullet Invited Talk, LUVOIR Session, 227th AAS Meeting, Kissimmee, FL (1/2016)
- \bullet Colloquium, University of Michigan, Ann Arbor, MI (10/2015)
- Colloquium, University of Texas at Austin, Austin TX (9/2015)
- \bullet Invited Talk, Hubble 25th Symposium, Baltimore MD (4/2015)
- \bullet Colloquium, University of Massachusetts, Lowell MA (3/2015)
- Colloquium, Brown University, Providence RI (2/2015)
- Colloquium, Vassar College, Poughkeepsie NY (2/2015)
- Invited Talk, 3D-HST Session, 225th AAS Meeting, Seattle WA (1/2015)
- Colloquium, University of Massachusetts, Amherst MA (9/2013)

• Invited Talk, "Watching Galaxies Grow Up", Ringberg Castle, DE (12/2011)

28 additional contributed talks at professional conferences and workshops (since 2008), plus 18 seminars (since 2011) and 5 poster presentations (since 2004).

RESEARCH	Postdoctoral Researchers:
Mentorship	• John Weaver, UNCOVER JWST Project (2022 - present)
	• Sinclaire Manning, NASA Hubble Prize Fellow (2021 - present)
	• Mimi Song, 3D-Herschel NASA/ADAP Project (2019 - present)
	Graduate Students:
	 Aubrey Medrano, "Spatially Resolving Galaxies in JWST/PRIMER", (1st/ 2nd year graduate project, co-supervised with Prof. Giavalisco, 2022-present) Yanzhe (Jenny) Zhang, "Star formation histories and spectral synthesis models", (1st/2nd yr grad project, co-supervised with Prof. Mo, 2022 - present) Sarah Bodansky, "What and where: Understanding the tangled relation between dust mass and obscuration in high redshift galaxies" (1st/2nd year graduate project, co-supervised with Prof. Pope; 2021 — present)
	• Joyce Caliendo, "Are the early quenched galaxies "running on empty" or inefficient at converting fuel into new star formation?" (1st/2nd year graduate project, co-supervised with Prof. Pope; 2021 - 2022)
	• Maike Clausen, "Size-Mass Relation of Recently Quenched Galaxies in 3D- DASH" (Visiting grad student, 2021 - 2022, remote supervision 2022 —)
	• Roxana Popescu, "Source Plane Reconstructions of Strong Lensed Distant Quiescent Galaxies" (2nd year graduate project, 2020 — 2022)
	• Sam Cutler, "Diagnosing DASH: Analyzing Morphologies in the COSMOS- DASH Survey" (UMass; 1st year project, 2019 - 2021); "Investigating the Origa of Low-Mass Quiescent Galaxies" (PhD thesis, 2022 —)
	• Mohammad Akhshik, "The Lensed Perspective: Searching for signatures of inside-out quenching" (UConn; PhD Thesis, 2016 — 2022)
	• Jonathan Mercedes Feliz, "Testing the level of obscured star formation in quiescent galaxies" (UConn; PhD 1st year project, 2018 — 2019)
	 Claire Dickey, "The Relation between [OIII]/Hβ and Specific Star Formation Rate in Galaxies at z=2" (Yale University; co-supervised 2015 — 2016)
	$Undergraduate \ Students:$
	• Seamus McNulty, "The Impact of adding Herschel Photometry to the 3D- HST Prospector Modeling Analysis", (Spring 2022 — present)
	• Zachary Webb, "Converting Monochromatic and Integrated Flux Densities to Star Formation Rate with SIMBA", awarded NASA/MA Space Grant Spring 2022 Fellowship (Spring 2021 — present)
	• Ananya Sreelehka, "Searching for Merger Signatures with Gini-M20 for Ear Quiescent Galaxies in JWST/CEERS", (Fall 2022 — 2023)
	• Leonardo Drake, "Revisiting the Galaxy Stellar-Mass Size Relation from the 3D-HST Hubble Legacy Survey using Prospector", awarded NASA/MA Space Grant funds for Summer 2022 (Spring 2022 — Summer 2022)
	• Seth Martin, "Exploring the Role of AGN with the 3D-Herschel Photometric

• Seth Martin, "Exploring the Role of AGN with the 3D-Herschel Photometric Catalogs", (Spring 2022 - 2023)

•	Lillian Wright, "Hunting for Hidden Treasures in the REQUIEM Survey"
	awarded NASA/MA Space Grant funds and David J. Van Blerkom Research
	Scholarship for Summer 2020 (Spring $2020 - 2023$)

- Joyce Caliendo, "A Closer Look into the Quenching of a Distant Compact Galaxy" awarded SURF for Summer 2019 (UConn; Spring 2019 - 2021)
- Tyler Metivier, "Simulating the Detectability of Tidal Features in the Distant Universe", awarded NASA CT Space Grant Undergraduate Research Fellowship in Spring 2018, (UConn; Fall 2016 2021)
- Alexandra Cain, "Resolving a Distant Dusty Galaxy with Hubble Data" (UConn; Spring 2018 Spring 2019)
- Sam Cutler, "Examining High Redshift Rotation Curve Outside the Local Universe", awarded NASA CT Space Grant Undergraduate Research Fellowship in Summer 2018, (UConn; Spring 2017 Spring 2019)
- Rochelle Horanzy, "The Ultimate LEGA-C: Does age really drive the spread in quiescent galaxy colors?" (UConn; Fall 2016 Spring 2018)
- Mohammad Ashas, "Calibrating the Hubble Space Telescope Legacy Field Data" (UConn; Fall 2016 Spring 2018)
- Warren Sharpp (FCAD Intern/UMass Amherst; Summer 2016 Fall 2016)
- Daniel Lange-Vagle (Tufts University; Fall 2014 Summer 2015)
- Michael Alburger (NASA Intern/Bucknell University; Summer 2014)

High School Students:

• Matthew Bzowyckyj (Kingwood Oxford/UConn, Summer 2018)

TEACHING ASTRO301: Writing About Astronomy, UMass Amherst (3 credits)

- Fall 2021 (11 students, 1/2 graduate TA; redesigned via Lilly Fellowship)
- Fall 2022 (19 students, 1/2 gradute TA)

ASTRO452H: Astrophysics II: Galaxies, UMass Amherst (4 credits)

• Spring 2021 (16 students, 1/2 graduate TA)

ASTRO191A: First Year Seminar in Astrophysics, UMass Amherst (1 credit)

• Fall 2020 (46 students; co-taught with Prof. Alexandra Pope)

ASTRO792A: Review of Current Literature, UMass Amherst (1 credit)

• Fall 2020 (20 students; co-taught with Prof. Alexandra Pope)

ASTRO100H: Exploring the Universe, UMass Amherst (4 credits)

- Spring 2020 (16 students, 1/2 graduate TA)
- Spring 2022 (25 students, 1/2 graduate TA)

PHYS1025Q: Introductory Astronomy, UConn (4 credit lab course)

- Fall 2018 (89 students, 1 graduate TA)
- Fall 2017 (84 students, 2 graduate TAs, 1 undergrad TA)

PHYS4720/6720: Galaxies and Interstellar Medium, UConn (3 credits)

• Spring 2019 (12 undergraduates, 2 graduate students)

Teaching Awards: UConn Provost's Letter of Teaching Excellence, Spring 2019 Education Training: Online courses and in-person workshops introducing

	evidence-based teaching best practices in STEM disciplines.
	• New Faculty in Physics & Astronomy Workshop (2020)
	• Teaching Excellence Workshop, Center for Astronomy Education (2016)
	• University Teaching 101, Johns Hopkins University (2014)
	• Evidence-Based Undergraduate STEM Teaching, Vanderbilt (2014)
	Workshop for New Physics and Astronomy Faculty (October 2020)
Outreach (select)	 NSF-IRES DAWN Scholars Program, Program Director, international summer research experience at the Cosmic Dawn Center in Copenhagen Denmark (Program has run summers of 2019, 2021 and 2022; <u>dawnires.com</u>) Inaugural Yale WiP+ Alumni Colloquium (Virtual; 2/2022) Panelist, UConn Science Salon, "Spacing Out: Ancient Stargazers to Modern Astrophysicists", Talcott Mountain Science Center (November 2018) Advised students in organizing Solar Viewing Event and Night Sky Tours for the UConn SPARK summer camp (Summer 2018) Public Lecture, Westport Astronomical Society (July 2017) Co-organizer, Solar Eclipse Viewing Party, UConn (attendence estimated at 2000 people; local TV and news media coverage; August 2017) AAS Ambassador (mentoring/training, access to resources and contacts in the Education & Public Outreach astronomy community, 2014 - present) Outreach presentations (including visits to 4 secondary schools and 6 universities, 2011 - present)
	 Ask an Astrophysicist, NASA Goddard Space Flight Center (2014)
PROFESSIONA	AL Service to the Scientific Community:
SERVICE (SELECT)	 Federal Review Panelist: NASA ADAP (Chair/2023); Large Millimeter Telescope (Chair/2021,2022); James Webb Space Telescope (2021) and Financial Review Committee (2021, 2023); Keck Observatory (2019, 2020, 2022); Hubble Space Telescope (2016, 2018); NSF (2014, 2015); NASA Earth and Space Science Fellowship (2014)
	• External Reviews: Princeton University Press, ALMA (2021, 2022, 2023); Canada Time Allocation Committee, Poland National Science Center, Chinese Telescope Access Program, NASA Postdoctoral Program Fellowship, Sapling Learning (2017 - present)
	 Science Organizing Committees: Subaru 20th Anniversary Conference (November 2019); CANDELS@UMass (October 2018); "Massive Beasts of the Cosmos", Kruger Park, South Africa (July 2016) LUVOIR Cosmic Origins Science Working Group (2016 - 2018)
	• LUVOIR High Definition Imager Working Group (2016 - 2018)
	Participant in WEIRST study group NASA (CSEC (2014-2015)

- Participant in WFIRST study group, NASA/GSFC (2014-2015)
- Ad-hoc Referee: ApJ, ApJ Letters, MNRAS, Nature, Nature Astronomy, A&A, JATIS, and PASA (2009-present)

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	 Service to the UMass Community (2019 — present): FCAD Summer Internship Program Director (2022, 2023) Department Colloquium Committee (2019/20, 2021/22) Second year Graduate Examination Committee (2020/21) Graduate Admissions Committee (2019/20, 2021/22, 2022/23)
	 Graduate Recruitment Committee (2019-2023) Department Personel Committee (2019/20, 2021/22)
	Service to the UConn Community $(2016 - 2019)$:
	• Development of Astrophysics Minor (approved starting AY18/19, co-led with Prof. Battersby and Trump), including creation of 4 astrophysics courses: PHYS 2701, 2702, 6710/4710, 6720/4720*, and PHYS1040QE (*=instructor of record).
	• PI of initative to adopt an open educational resource textbook in Introductory Astronomy (PHYS1025Q), awarded through the UConn Open and Affordable Initiative (Fall 2017)
	• PI of course redesign of Introductory Astronomy through Provost's Large Course Redesign Grant Initiative (Fall 2017)
Successful	TOTAL FUNDING (2017 - present) = $3.3M$ (external), $46K$ (internal)
GRANTS & PROPOSALS (SELECT)	 NSF/CAREER Grant "CAREER: Establishing Coherent Frameworks for Massive Galaxy Formation and Inclusive Astronomy" (PI; \$799k; 9/1/23-8/31/28)
(SILLET)	 James Webb Space Telescope Cycle 1 Treasury Program GO-2561 "UNCOVER: Ultra-deepNIRCam and NIRSpec Observations Before the Epoch of Reionization" (68 hours; Co-I; \$235k; 5/1/22 - 4/30/25)
	• James Webb Space Telescope Cycle 1 Large Treasury Program GO-1837 "PRIMER: Public Release IMaging for Extragalactic Research" (187 hours; Co-I; \$240k; 9/1/22 - 8/30/25)
	 James Webb Space Telescope Cycle 1 Program GO-1895 "FRESCO: The First Reionization Epoch Spectroscopic COmplete Survey" (53 hours; Co-I; \$22k; 9/1/22 - 8/30/25)
	 James Webb Space Telescope Cycle 1 Pure-Parallel Program GO-2514 "PANORAMIC - A Pure Parallel Wide Area Legacy Imaging at 1-5 micron" (150 hours; Co-I; \$49k; 9/1/22 - 8/30/25)
	• Lilly Fellowship in Teaching Excellence ($10k$; $9/1/21 - 5/1/22$)
	 Hubble Space Telescope Cycle 28 Large Treasury Program GO-16259 "3D- DASH: A Wide Field WFC3/IR Survey of COSMOS" (259 orbits; Co-I; \$344k; 5/1/21 - 4/30/24)
	• Hubble Space Telescope Cycle 28 Program AR-16146 "Pirate: Walking the Plank to Spatially Resolved Stellar Populations in CANDELS" (Co-I)
	 NASA FINESST Award for UConn PhD student Mohammad Akhshik (PI/ Faculty Sponsor; \$135k, 9/1/19 – 8/31/22)
	• ALMA Cycle 7 Program, "Running on Empty: Probing Gas Reservoirs of the REQUIEM Lensed Quiescent Galaxies at z=1.6-3.2" (PI; 2019)

- Spitzer DDT Proposal "Resolving QUIEscent Magnified (REQUIEM) Galaxies: The Missing (Spitzer/IRAC) Piece of the Puzzle" (PI, 0.3h)
- Alfred P. Sloan Fellowship (70k; 9/1/19 8/31/21)
- Hubble Space Telescope Cycle 26 Program GO-15663 "REsolving QUIEscent Magnified (REQUIEM) Galaxies: Uncovering Formation Pathways via Spatially Resolved Gradients at z=1.6-2.9" (Co-PI; \$408k; 6/1/19 - 5/31/22)
- NASA/ADAP Grant "3D-Herschel: Completing the CANDELS/3D-HST Legacy with a New Bayesian Framework for Deriving Galaxy Properties" (PI; \$418k; 1/1/19 – 1/31/22)
- NSF/IRES Grant "IRES Track I: Exploring New Horizons in the Observable Universe at the Cosmic Dawn Center of Excellence in Copenhagen" (PI; \$300k; 2/1/19 – 1/31/22)
- ALMA Cycle 6 Program, "Running on Empty: Probing the Gas Reservoirs of Lensed Quiescent Galaxies at z=1.6-3.2" (PI; 2018)
- Cosmic Dawn Center of Excellence, Neils Bohr Institute, funded by the Danish National Research Foundation (Associate Faculty; 2018 – 2028)
- NASA Connecticut Space Grant Faculty Seed Research Grant (\$10k)
- Hubble Space Telescope Cycle 25 Program AR-15027 "Completing the Legacy of Hubble's Wide/Deep Fields: An Aligned Complete Dataset of 1220 Orbits on the GOODS-N Region" (Co-I; \$669k/total, \$110k/UMass)
- NASA Probe-class Mission Concept, "Cosmic Evolution through UV Spectroscopy (CETUS)", (Science Co-I; 2017)
- UConn Provost's Open Educational Resource Award, "Cosmic Dawn at UConn: Astronomy for Everyone" (PI; \$10k; 2017)
- UConn Provost's Large Course Redesign Grant (Co-PI; \$26k; 2017)
- Hubble Space Telescope Cycle 24 Program GO-14622, "A Chance Alignment: Resolving a Massive Compact Galaxy Actively Quenching at z=1.8" (12 orbits; PI; \$138k; 02/01/17 - 01/31/20)
- 2015 Hubble Prize Fellowship HF2-51368.001, "Spatially-Resolved Stellar Populations and Dust in Distant Galaxies"
- American Astronomical Society FAMOUS Travel Grant (\$1k; 2015)
- Hubble Space Telescope Cycle 18 Treasury Program GO-12177, "3D-HST: A Spectroscopic Galaxy Evolution Treasury" (248 orbits; Co-I)
- NOAO Programs 2010A-0015, 2010B-0407, and 2011B-0509 (Co-I)

Media	• Press Release: <u>NASA Webb's Deepest Ever View of Pandora's Cluster</u> (2/2023)	
&	Press Release: <u>How UMass Astronomers Helped the Hubble Space Telescope</u>	
Press	<u>Take the Widest Photo of the Universe Ever</u> $(6/2022)$	
Releases	• Press Release: Future Prospects with Roman Space Telescope $(9/2021)$	
(SELECT)	• Press Release: <u>Hubble finds Early, Massive Galaxies Running on Empty</u> (9/2021)	
	• Press Release: <u>Rerun of Supernova Blast is Expected to Appear in 2037</u> (9/2021)	
	• <u>NASA/ESA Picture of the Week</u> Feature $(7/2021)$	
	• Astronomy Department Feature, The Magazine, UMass Amherst (7/2021)	

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- UMass College of Natural Sciences "Twitter Takeover" (10/2020)
- Live TV Interview at WGBY's Connecting Point (11/2019)
- Press Release: Cosmic Yeti from the Dawn of the Universe Found Lurking in Dust (10/2019)
- News Article: UConn Professors Explore Universe with NASA (12/2017)
- Press Release: <u>Hubble Pushed Beyond Limits to Spot Clumps of New Stars in</u> <u>Distant Galaxy</u> (7/2017)
- Press Release: <u>New Astronomy Center will reveal Cosmic Dawn</u> (4/2017)
- 5 Live TV Interviews and <u>Instagram Video</u> to celebrate Hubble's 25th Anniversary, NASA/Goddard TV Media Studio (March & April 2015)
- Press Release: <u>NASA Telescopes Help Uncover Early Construction Phase of</u> <u>Giant Galaxy</u> (8/2014)
- Press Release: <u>Hubble Reveals First Scrapbook Pictures of Milky Way's</u> <u>Formative Years</u> (11/2013)
- Press Release: Astronomers Discover that Galaxies are either Awake or Asleep (6/2010)

ADDITIONAL Computing: Experience with IDL, IRAF, and Python

EXPERIENCE **Telescopes:**

- James Webb Space Telescope (NIRSpec, NIRCam, MIRI, NIRISS)
- *Hubble Space Telescope* (WFC3, ACS, WFPC2)
- Spitzer Space Telescope (IRAC, MIPS)
- Atacama Large Millimeter Array
- Large Millimeter Telescope (AzTEC)
- Whipple Observatory 6.5m-MMT (2 nights; MMIRS)
- Kitt Peak 4m-Mayall (26 nights; NEWFIRM)
- Cerro-Tololo 4m-Blanco (5 nights; NEWFIRM)
- XMM-Newton and Chandra X-ray Observatories.

Surveys and Large Collaborations:

- PANORAMIC Survey (2023 present)
- FRESCO Survey (2022 present)
- PRIMER Survey (2022 present)
- UNCOVER Survey (2022 present; Photometric Team Lead)
- COSMOS-Web Survey (2022 present)
- Pirate (2020 present)
- 3D-DASH Survey (2020 present)
- REQUIEM Galaxy Survey (co-leader; 2018 present)
- Northeast Participation Group, Prime Focus Spectrograph (2018 present)
- Hubble Frontier Fields DeepSpace (HFFDeepSpace; 2015 2017)
- SDSS Giant Arcs Survey (SGAS; 2012 present)
- FourStar Galaxy Evolution Survey (ZFOURGE; 2012 2016)
- 3D-HST: Spectroscopic Galaxy Evolution Survey with HST (2011 2016)
- NEWFIRM Medium-Band Survey (NMBS and NMBS-II; 2009 2012)

Professional Memberships:

- American Astronomical Society (2003 present)
- International Astronomical Union (2018 present)