
KATHERINE EMILY WHITAKER

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| CONTACT INFORMATION | Department of Astronomy University of Massachusetts Amherst 710 North Pleasant Street Amherst, MA 01003 USA | Office: +1-413-545-2417 Cell: +1-781-864-6624 E-mail: kwhitaker@astro.umass.edu Webpage: www.kewhitaker.com |
| RESEARCH INTERESTS | Observational galaxy formation and evolution: quenching of star formation, galaxy morphology, star formation rate - stellar mass relation, spatially-resolved stellar populations, spectroscopic ages, dust content, star formation efficiency. | |
| EDUCATION | <p>Ph.D. in Astronomy, Yale University (June 2012) Thesis: <i>A Cosmic Metamorphosis: The Quenching of Star-formation in Massive Galaxies Over the Last Eleven Billion Years</i> Advisor: Pieter G. van Dokkum</p> <p>M.S., M.Phil. in Astronomy, Yale University (May 2007, 2008)</p> <p>B.S. in Physics & Astronomy, Univ. of Massachusetts Amherst (May 2005) <i>Summa cum Laude</i>, with highest honors in the Commonwealth College</p> | |
| POSITIONS | Hubble Fellow/Assistant Research Professor, UMass Amherst NASA Postdoctoral Program Fellow, Goddard Space Flight Center Graduate Research Assistant, Yale University Graduate Research Assistant, Boston University Undergraduate Research Assistant, UMass Amherst REU Intern, Harvard-Smithsonian CfA | 2015–present 2012–2015 2006–2012 2005–2006 2004–2005 Summer 2003/2004 |
| HONORS & AWARDS | <ul style="list-style-type: none"> · 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 | 2015 2005 2005 2004 2004 |
| COLLOQUIA AND INVITED TALKS | <ul style="list-style-type: none"> · Invited Talk, LUVOIR Session, AAS, 227th Meeting, Kissimmee, FL (1/2016) · Colloquium, University of Michigan, Ann Arbor, MI (10/2015) · Colloquium, University of Texas at Austin, Austin TX (9/2015) · Invited Talk, Hubble 25th Symposium, Baltimore MD (4/2015) · 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, AAS, 225th Meeting, Seattle WA (1/2015) · Colloquium, University of Massachusetts, Amherst MA (9/2013) · Invited Talk, “Watching Galaxies Grow Up”, Ringberg Castle DE (12/2011) <p>18 additional contributed talks at professional conferences and workshops (since 2008), plus 14 seminars (since 2011) and 4 poster presentations (2004–2011).</p> | |

TEACHING &
OUTREACH

Mentor: *Supervisor of undergraduate research projects (e.g., NASA intern) and graduate research; responsibilities include developing science programs, teaching data analysis techniques, and daily to monthly mentoring of the students.*

- Claire Dickey (Graduate, Yale University) 1/2015–2/2016
- Daniel Lange-Vagle (Undergrad, Tufts University) 8/2014–present
- Michael Alburger (Undergrad, Bucknell Univ/NASA) 6/2014–8/2014

AAS Astronomy Ambassador 1/2014–present

This program provides mentoring and training experiences for young astronomers, including new faculty, as well as access to resources and a network of contacts within the astronomy Education & Public Outreach community.

Education Training: *Online courses and in-person workshops designed to introduce the skills necessary to meet the demands of teaching at the university level, including evidence-based teaching practices in STEM disciplines.*

- CAE Teaching Excellence Workshop, 227th AAS Meeting 1/2016
- University Teaching 101, Johns Hopkins University 3/2014–4/2014
- Evidence-Based Undergrad. STEM Teaching, Vanderbilt 10/2014–11/2014

Guest Lectures: *General presentations on galaxy evolution, my research, and promoted science careers at the middle school, high school and university levels.*

- Amherst College, Exploring the Cosmos 12/2015
- Colby College, Senior Physics & Astronomy Colloq. 11/2015
- Samuel Ogle Middle School, Bowie MD 4/2015
- Howard University, Washington D.C. 10/2014
- Hale Middle School, Stow MA 3/2010, 1/2014
- Granby High School, Granby MA 10/2012
- University of Massachusetts Amherst, Freshman Seminar 10/2011

Tutor, Yale University 2007–2010

Tutored Yale undergraduates in physics, astronomy and calculus through the Science and Quantitative Reasoning Center, providing personalized and longer-term support (2–3 students per semester, weekly sessions).

Teaching Fellow, Yale University 2006–2009

Designed weekly discussion sessions, special topic lectures and problem-set questions, led exam review sessions, graded homework and exams.

- ASTR 110 Planets and Stars (47 students)
- ASTR 120 Galaxies and the Universe (93–135 students, 3 semesters)
- ASTR 130 Life in the Universe (27 students)
- ASTR 210 Stars and Their Evolution (12 students)

Other Outreach:

- Ask an Astrophysicist, NASA/GSFC 1/2014–6/2014
- Science Fair Judge, Roosevelt High, Greenbelt MD 2/2013, 2/2014
- Girls' Science Investigations, Yale University 10/2007

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|---|---|---|-----------|---|-----------|--|--------------|---|--------------|--|--------------|---|-----------|
| GRANTS AWARDED | <ul style="list-style-type: none"> · HST Cycle 23 Legacy Program AR-14302 (Co-I) · HST Cycle 23 Program GO-14230 (20 orbits; Co-I) · Hubble Fellowship HF2-51368.001 (\$360,000) · American Astronomical Society 2015 FAMOUS Travel Grant (\$1,000) · NASA/Keck Program 2015A-N097M (Co-I) · JWST NASA Postdoctoral Fellowship (\$250,000) · 3D-HST Treasury Program GO-12177/12328 (248 orbits; Co-I) · HST Cycle 20 Program GO-12990 (15 orbits; Co-I) · NOAO Programs 2010A-0015, 2010B-0407, and 2011B-0509 (Co-I) · Spitzer Cycle 10 Program 10084 (Co-I) · NASA CT Space Grant Graduate Fellowship (\$70,000) | | | | | | | | | | | | |
| PROFESSIONAL ACTIVITIES | <table border="0" style="width: 100%;"> <tr> <td>Science Organizing Committee, 3rd CET Workshop, Cape Town, SA</td> <td style="text-align: right;">7/2016</td> </tr> <tr> <td>Participant in WFIRST study group, NASA/GSFC</td> <td style="text-align: right;">2014–2015</td> </tr> <tr> <td>National Science Foundation Review Panelist</td> <td style="text-align: right;">2014, 2015</td> </tr> <tr> <td>NASA Earth and Space Science Fellowship Review Panelist</td> <td style="text-align: right;">2014</td> </tr> <tr> <td>Referee for ApJ, ApJ Letters, MNRAS, A&A, and PASA</td> <td style="text-align: right;">2009–present</td> </tr> <tr> <td>Yale Time Allocation Committee (SMARTS, WIYN, Keck)</td> <td style="text-align: right;">2009–2010</td> </tr> </table> | Science Organizing Committee, 3rd CET Workshop, Cape Town, SA | 7/2016 | Participant in WFIRST study group, NASA/GSFC | 2014–2015 | National Science Foundation Review Panelist | 2014, 2015 | NASA Earth and Space Science Fellowship Review Panelist | 2014 | Referee for ApJ, ApJ Letters, MNRAS, A&A, and PASA | 2009–present | Yale Time Allocation Committee (SMARTS, WIYN, Keck) | 2009–2010 |
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| MEDIA & PRESS RELEASES | <table border="0" style="width: 100%;"> <tr> <td>· NASA Hubble 25th Anniversary, 5 live TV Interviews</td> <td style="text-align: right;">4/2015</td> </tr> <tr> <td>· NASA Instagram video celebrating Hubble’s 25th Anniversary https://instagram.com/p/1WEeIIIaKg/?taken-by=nasa</td> <td style="text-align: right; vertical-align: bottom;">3/2015</td> </tr> <tr> <td>· NASA Telescopes Help Uncover Early Construction Phase of Giant Galaxy http://hubblesite.org/newscenter/archive/releases/2014/37/</td> <td style="text-align: right; vertical-align: bottom;">8/2014</td> </tr> <tr> <td>· Hubble Reveals First Scrapbook Pictures of Milky Way’s Formative Years http://hubblesite.org/newscenter/archive/releases/2013/45/</td> <td style="text-align: right; vertical-align: bottom;">11/2013</td> </tr> <tr> <td>· Astronomers Discover that Galaxies are either Awake or Asleep http://opac.yale.edu/news/article.aspx?id=8669</td> <td style="text-align: right; vertical-align: bottom;">6/2010</td> </tr> </table> | · NASA Hubble 25th Anniversary, 5 live TV Interviews | 4/2015 | · NASA Instagram video celebrating Hubble’s 25th Anniversary https://instagram.com/p/1WEeIIIaKg/?taken-by=nasa | 3/2015 | · NASA Telescopes Help Uncover Early Construction Phase of Giant Galaxy http://hubblesite.org/newscenter/archive/releases/2014/37/ | 8/2014 | · Hubble Reveals First Scrapbook Pictures of Milky Way’s Formative Years http://hubblesite.org/newscenter/archive/releases/2013/45/ | 11/2013 | · Astronomers Discover that Galaxies are either Awake or Asleep http://opac.yale.edu/news/article.aspx?id=8669 | 6/2010 | | |
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| · NASA Telescopes Help Uncover Early Construction Phase of Giant Galaxy http://hubblesite.org/newscenter/archive/releases/2014/37/ | 8/2014 | | | | | | | | | | | | |
| · Hubble Reveals First Scrapbook Pictures of Milky Way’s Formative Years http://hubblesite.org/newscenter/archive/releases/2013/45/ | 11/2013 | | | | | | | | | | | | |
| · Astronomers Discover that Galaxies are either Awake or Asleep http://opac.yale.edu/news/article.aspx?id=8669 | 6/2010 | | | | | | | | | | | | |
| ADDITIONAL EXPERIENCE | <p>Computing: Experience with IDL, IRAF, and Python</p> <p>Telescopes:</p> <ul style="list-style-type: none"> · <i>Hubble Space Telescope</i> (WFC3, ACS, WFPC2) · <i>Spitzer Space Telescope</i> (IRAC, MIPS) · Whipple Observatory 6.5m-MMT (2 nights; MMIRS) · Kitt Peak 4m-Mayall (26 nights; NEWFIRM) · Cerro-Tololo 4m-Blanco (5 nights; NEWFIRM) · <i>XMM-Newton</i> and <i>Chandra</i> X-ray Observatories. <p>Surveys and Large Collaborations:</p> <table border="0" style="width: 100%;"> <tr> <td>· NEWFIRM Medium-Band Survey (NMBS and NMBS-II)</td> <td style="text-align: right;">2009–2011</td> </tr> <tr> <td>· 3D-HST: Spectroscopic Galaxy Evolution Survey with HST</td> <td style="text-align: right;">2011–2015</td> </tr> <tr> <td>· FourStar Galaxy Evolution Survey (ZFOURGE)</td> <td style="text-align: right;">2012–present</td> </tr> <tr> <td>· SDSS Giant Arcs Survey (SGAS)</td> <td style="text-align: right;">2012–present</td> </tr> <tr> <td>· Hubble Frontier Fields (HFF)</td> <td style="text-align: right;">2015–present</td> </tr> </table> | · NEWFIRM Medium-Band Survey (NMBS and NMBS-II) | 2009–2011 | · 3D-HST: Spectroscopic Galaxy Evolution Survey with HST | 2011–2015 | · FourStar Galaxy Evolution Survey (ZFOURGE) | 2012–present | · SDSS Giant Arcs Survey (SGAS) | 2012–present | · Hubble Frontier Fields (HFF) | 2015–present | | |
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REFEREED As of December 2015 – h-index: 28, g-index: 52, i10-index: 45. 56 refereed PUBLICATIONS publications, plus 8 under review. 2,735 citations total, with 613 citations of first SUMMARY author papers and 1,372 citations since 2012 (source: ADS).

- 1ST AUTHOR PUBLICATIONS 1) **Whitaker, K. E.**, Franx, M., Bezanson, R., Brammer, G.B., van Dokkum, P.G., Kriek, M.T., Labbe, I., Leja, J., Momcheva, I.G., Nelson, E.J., Rigby, J.R., Rix, H.-W., Skelton, R.E., van der Wel, A., Wuyts, S., “Galaxy Structure as a Driver of the Star Formation Sequence Slope and Scatter”, 2015, *Astrophysical Journal Letters*, 811:12.
- 2) **Whitaker, K. E.**, Franx, M., Leja, J., van Dokkum, P.G., Henry, A., Skelton, R.E., Fumagalli, M., Momcheva, I.G., Brammer, G.B., Labbé, I., Nelson, E.J., Rigby, J.R., “Constraining the Low-Mass Slope of the Star Formation Sequence at $0.5 < z < 2.5$ ”, 2014, *Astrophysical Journal*, 795:104.
- 3) **Whitaker, K. E.**, Rigby, J.,R., Brammer, G.B., Gladders, M.D., Sharon, K., Teng, S.H., Wuyts, E., “Resolved Star Formation on Sub-galactic Scales in a Merger at $z = 1.7$ ”, 2014, *Astrophysical Journal*, 790:143.
- 4) **Whitaker, K. E.**, van Dokkum, P., Brammer, G., Momcheva, I., Skelton, R., Franx, M., Kriek, M., Labbé, I., Fumagalli, M., Lundgren, B., Nelson, E., Patel, S., Rix, H.-W., “Quiescent Galaxies in the 3D-HST Survey: Spectroscopic Confirmation of a Large Number of Galaxies with Relatively Old Stellar Populations at $z \sim 2$ ”, 2013, *Astrophysical Journal Letters*, 770:39.
- 5) **Whitaker, K. E.**, van Dokkum, P., Brammer, G., Franx, M. “The Star-formation Mass Sequence out to $z=2.5$ ”, 2012, *Astrophysical Journal Letters*, 754:29.
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REFERENCES

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