John F. Wu

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Education

Rutgers, The State University of New Jersey — **Piscataway, NJ**
Ph.D., Physics and Astronomy — *Sept 2013–present*

Carnegie Mellon University — **Pittsburgh, PA**
B.Sc., Physics/Astrophysics — *Sept 2009–May 2013*

Professional Experience

Rutgers, The State University of New Jersey — **Piscataway, NJ**
Graduate research assistant, advised by Andrew Baker — *July 2013–present*
- *Investigating star formation in galaxies in massive clusters by using multi-wavelength observations and stacking.*

Teaching assistant — *Jan 2015–May 2015*
- *Instructed lab sections for Physics 343: Observational radio astronomy.*
- *Graded assignments for Physics 342: Principles of astrophysics.*

McWilliams Center for Cosmology, Carnegie Mellon University — **Pittsburgh, PA**
Undergraduate research assistant, advised by Rachel Mandelbaum — *July 2012–May 2013*
- *Characterized galaxies in rich clusters by using Sloan Digital Sky Survey observations.*

Carnegie Mellon University CyLab — **Pittsburgh, PA**
Research intern — *May 2011–Aug 2011*
- *Developed and tested robust facial recognition software.*
- *Created a proof of concept image manipulation tool for artificial aging.*

Other Experience

USAID Research & Innovation Fellowship — **Cape Town, South Africa**
Improving the LADUMA Pipeline Using MeerKAT Early Science Data — *Sept 2016–Nov 2016*
- *Worked with Sarah Blyth* (UCT) *and Bradley Frank* (UCT) *to analyze simulated MeerKAT data using ARCADE (African Research Cloud).*
- *Developed a pipeline to test and benchmark source-finding software.*
- *Attended the* Visualization in Astronomy *and* 3GC4: HI Fidelity conferences.

Vatican Observatory Summer School — **Castel Gandolfo, Italy**
VOSS: *Galaxies, Near and Far, Young and Old* — *June 2014*
- *Completed projects with Michele Trenti* (Melbourne), *Jacqueline van Gorkom* (Columbia), *and Chris Carilli* (NRAO).

NRAO Synthesis Imaging Workshop — **Socorro, NM**
National Radio Astronomy Observatory 14th Synthesis Imaging Workshop — *May 2014*
- *Reduced ALMA data using Common Astronomy Software Applications (CASA).*

Refereed Publications

[2] "Herschel and ALMA Observations of Massive SZE-selected Clusters,"
Wu, J. F., Aguirre, P., Baker, A. J., Devlin, M. J., Hilton, M., Hughes, J. P., Infante, L., Lindner R. R., Sifón, C., 2018, *ApJ*, 853, 195

[1] "Galaxy Candidates at z 10 in Archival Data from the Brightest of Reionizing Galaxies (BORG[z8]) Survey,"
Bernard, S. R., Carrasco, D., Trenti, M., Oesch, P. A., **Wu, J. F.**, Bradley, L. D., Schmidt, K. B., Bouwens, R. J., Calvi, V., Mason, C. A., Stiavelli, M., Treu, T., 2016, *ApJ*, 827, 76

Honors and Awards

TA/GA Professional Development Fund, *Rutgers* — *June 2017*
International Travel Grant, *American Astronomical Society* — *Mar 2017*
TA/GA Professional Development Fund, *Rutgers* — *June 2016*
Special Study Award, *Rutgers* — *Mar 2014*
Claud Lovelace Fellowship, *Rutgers* — *Sept 2013–June 2014*
Senior Leadership Recognition, *Carnegie Mellon* — *May 2013*
Mellon College of Science College Honors, *Carnegie Mellon* — *May 2013*

Seminars and Conference Talks/Posters

Galaxy Evolution Across Time, *Contributed poster* — *June 2017*
Princeton-Rutgers 3rd annual extragalactic science day, *Contributed talk* — *May 2016*
American Astronomical Society (AAS) 227th meeting, *Contributed talk* — *Jan 2016*
Australian Astronomical Observatory (AAO), *Colloquium* — *Dec 2015*

Telescope Proposals and Observing

Anglo-Australian Telescope (AAT)

CoI, *Redshifts in the LADUMA Field to $z \sim 0.6$* (N0331) — *2017B*
- Awarded five nights of AAT/AAOmega to continue campaign of measuring redshifts in the LADUMA field.

CoI, *Redshifts in the LADUMA Field to $z \sim 0.6$* (N0334) — *2015B*
- Awarded four nights of AAT/AAOmega time to measure galaxy redshifts in preparation for studying neutral hydrogen with the LADUMA survey.
- Observed at the AAT and detected ~ 1600 galaxy redshifts.

Atacama Large Millimeter/submillimeter Array (ALMA)

CoI, *Galaxies in (and behind) two massive high-redshift clusters* (2013.1.01358.S) — *Cycle 2*
- Obtained Band 6 (230 GHz) mosaic observations to study atomic carbon and molecular CO emission of cluster galaxies, and also to study the dust continuum emission of cluster and background galaxies.
- Reduced data by using the NAASC computing facilities at NRAO in Charlottesville.

Southern African Large Telescope (SALT)

CoI, *Preparing for LADUMA: SALT Redshift Measurements* (2017-1-MLT-014) — *2017-1*
- Awarded 40770 seconds of P1 (high priority) time to continue measuring redshifts in LADUMA field.
- Continuation of 2016-2-SCI-051.

CoI, *Preparing for LADUMA: SALT Redshift Measurements* (2016-2-SCI-051) — *2016-2*
- Awarded 73616 seconds of observing time for pilot project to measure galaxy redshifts at $0.6 < z < 1.1$.

PI, *Fabry-Pérot imaging of two massive galaxy clusters* (2016-1-SCI-040) — *2016-1*
- Continuation of 2015-2-SCI-052 (awarded an additional 14000 seconds of P1 time).

PI, *Fabry-Pérot imaging of two massive galaxy clusters* (2015-2-SCI-052) — *2015-2*
- Continuation of the 2015-1 DDT proposal (awarded 14000 seconds of P1 time).

PI, *SALT Fabry-Pérot imaging of two massive galaxy clusters* (DDT) — *2015-1*
- Awarded 5600 seconds of P2 (medium priority) Rutgers discretionary time to pilot a blind Fabry-Pérot search for [OII] emitting galaxies in two massive, $z \sim 1$ clusters.

Leadership, Service, and Outreach

Public Talk, *Rutgers Friends of Astronomy* — *Sept 2017*
Studying Galaxy Clusters with Herschel, ALMA, and SALT

Guest Lecturer, *Physics 343: Observational radio astronomy* — *Mar 2017*

Guest Lecturer, *Byrne Seminar: The Poetry of Astronomy* — *Feb 2016*

TAC member, *SALT 2015-2 Rutgers Time Allocation Committee* — *Sept 2015*

LOC member, *SKA Pathfinders HI Science Coordination Committee (PHISCC)* — *Mar 2015*

Organizer, *Student Seminars in Physics and Astronomy at Rutgers (SSPAR)* — *Oct 2014–May 2015*

Vice President, *Rutgers Physics Graduate Student Organization* — *Sept 2014–May 2015*

Public Talk, *Rutgers Astronomical Society* — *Mar 2014*
Anisotropies in the Cosmic Microwave Background: B-modes and Inflation

Skills

Programming: Python, MATLAB/Octave, IDL, Java, C++, HTML5/CSS, LaTeX

Software: SciPy/matplotlib/pandas/seaborn, AstroPy, git, SAOImage DS9, Miriad, CASA, Source Extractor

Data reduction: ALMA, SALT Fabry-Pérot