

## John Chisholm

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<b>RESEARCH INTERESTS</b>	I observe the interplay between massive stars and gas. This includes the production and escape of ionizing photons as well as the generation of galaxy-scale outflows.	
<b>OVERALL METRICS</b>	<b>First Author Publications:</b> 10	<b>H-index:</b> 12
	<b>PI HST Orbits:</b> 134	<b>Total HST Orbits:</b> 610
	<b>Total External Funding:</b> \$1.39 Million	
<b>EDUCATION</b>	<b>PhD, Astronomy, University of Wisconsin</b>	<b>2010–2016</b>
	<ul style="list-style-type: none"><li>• Thesis title: “<i>The physical conditions and scaling relations of multi-phase galactic outflows.</i>”</li><li>• Full text: <a href="http://adsabs.harvard.edu/abs/2016PhDT.....58C">http://adsabs.harvard.edu/abs/2016PhDT.....58C</a></li><li>• Advisor: Christy Tremonti</li></ul>	
	<b>B.S., Physics, minor Mathematics, Boston College</b>	<b>2006–2010</b>
<b>RESEARCH EXPERIENCE</b>	<b>NHFP Hubble Fellow</b> University of California–Santa Cruz	<b>2019–Present</b>
	<b>IMPS Fellow</b> University of California–Santa Cruz	<b>2018–2019</b>
	<b>Post-doctoral Researcher</b> Geneva Observatory	<b>2016–2018</b>
	<ul style="list-style-type: none"><li>• Advisor: Prof. Daniel Schaerer</li></ul>	
	<b>Research Assistant</b> University of Wisconsin	<b>2010–2016</b>
	<ul style="list-style-type: none"><li>• Advisor: Prof. Christy Tremonti</li></ul>	
	<b>NSF EAPSI Fellow</b> Academia Sinica, Taipei Taiwan	<b>2013</b>
	<ul style="list-style-type: none"><li>• Advisor: Dr. Satoki Matsushita</li></ul>	
<b>OBSERVING PROPOSALS PRINCIPLE INVESTIGATOR</b>	<b>Hubble Space Telescope Cycle 27</b>	<b>2019</b>
	<ul style="list-style-type: none"><li>• Title: “<i>Title: Constraining the Stellar Astrophysics Powering Cosmic Reionization: Spectral Templates of Extremely Low-metallicity Main sequence O-stars</i>”</li><li>• Proposal ID: 15967</li><li>• 49 orbits</li><li>• Requested Funding: \$469,022</li></ul>	
	<b>Hubble Space Telescope Cycle 27</b>	<b>2019</b>
	<ul style="list-style-type: none"><li>• Title: “<i>What lurks below the Lyman-Limit? Uncovering the unseen ionizing continuum of massive stars</i>”</li><li>• Proposal ID: 15966</li><li>• 27 orbits</li><li>• Requested Funding: \$273,781</li></ul>	

- Hubble Space Telescope Cycle 27** **2019**
- Title: *“Deciphering Cosmic Reionization with Mg II Emission: Uncovering the most Promising Tracer of LyC Escape for JWST”*
  - Proposal ID: 15845
  - 30 orbits
  - Requested Funding: \$189,225
  - Role: Writer; Co-PI
- Lick/Shane 3 m Telescope Second Semester 2019** **2019**
- Title: *“Unearthing the unseen ionizing continua of massive stars with optical emission lines”*
  - 3 nights
- NASA Keck Telescope** **2019**
- Title: *“Spatially Mapping How Photons Escape Neutral Gas with Mg II Emission”*
  - Proposal ID: 52/2019B\_N107
  - 1 night
  - Awarded Funding: \$12,350
- NRAO Very Large Array** **2018**
- Title: *“Do Gas Mass Fractions Shape the Mass-Metallicity Relation?”*
  - Proposal ID: VLA/18B-147
- NOAO Large Binocular Telescope** **2018**
- Title: *“Confirming that 5 galaxies are in the epoch of reionization and testing if they emit ionizing photons”.*
  - Proposal ID: 2018B-0358
  - 1 night
- Hubble Space Telescope Mid-Cycle, Cycle 25** **2017**
- Title: *“The sub-kiloparsec comparison of stellar clumps and molecular gas within the spiral arms of a high-redshift galaxy”*
  - Proposal ID: 15435
  - 4 orbits
- Hubble Space Telescope GO proposal, Cycle 25** **2017**
- Title: *“Do galactic outflows shape the stellar mass-metallicity relationship?”*
  - Proposal ID: 15099
  - 24 orbits
  - \$43,909 of funding awarded.
- Hubble Space Telescope Archival Project, Cycle 21** **2013**
- Title: *“An Archival COS Study of Multi-phase Galactic Outflows and Their Dependence on Host Galaxy Properties”*
  - Proposal ID: 13239
  - \$115,172 of funding awarded.

<b>OBSERVING PROPOSALS CO- INVESTIGATOR</b>	<p><b>Keck Telescope</b> 10.5 total nights <span style="float: right;"><b>2018–Present</b></span></p> <ul style="list-style-type: none"> <li>• Observing with the KCWI and MOSFIRE instruments.</li> </ul>
	<p><b>Hubble Space Telescope</b> Cycle 27 <span style="float: right;"><b>2019</b></span></p> <ul style="list-style-type: none"> <li>• Title: <i>“The COS Legacy Archive Spectroscopic Survey (CLASSY): A UV Treasury of StarForming Galaxies”</i></li> <li>• Proposal ID: 15840</li> <li>• 133 orbits</li> <li>• Project Role: Co-PI; Reionization Science Project Lead</li> <li>• Principle Investigator: Danielle Berg</li> <li>• Requested Funding: \$191,296</li> </ul>
	<p><b>Hubble Space Telescope</b> Cycle 27 <span style="float: right;"><b>2019</b></span></p> <ul style="list-style-type: none"> <li>• Title: <i>“Lyman Continuum Escape in High Definition”</i></li> <li>• Proposal ID: 15949</li> <li>• 42 orbits</li> <li>• Principle Investigator: Michael Gladders</li> </ul>
	<p><b>Hubble Space Telescope</b> Cycle 27 <span style="float: right;"><b>2019</b></span></p> <ul style="list-style-type: none"> <li>• Title: <i>“UV emission line spectra of <math>z \sim 0.3-0.4</math> Lyman continuum emitters a key reference to uncover the source of cosmic reionization”</i></li> <li>• Proposal ID: 15941</li> <li>• 42 orbits</li> <li>• Principle Investigator: Daniel Schaerer</li> <li>• Requested Funding: \$5,313</li> </ul>
	<p><b>ALMA</b> Cycle 7 <span style="float: right;"><b>2019</b></span></p> <ul style="list-style-type: none"> <li>• Title: <i>“The cold ISM in nearby analogs of cosmic reionization sources”</i></li> <li>• Principle Investigator: Daniel Schaerer</li> <li>• Proposal ID: 2019.1.00730.S</li> </ul>
	<p><b>AstroSat</b> Cycle 7 <span style="float: right;"><b>2019</b></span></p> <ul style="list-style-type: none"> <li>• Title: <i>“The Sunburst Arc: Spatially resolved imaging of rest-frame 500 Å Lyman-continuum in the brightest lensed galaxy”</i></li> <li>• Proposal ID: A07_165</li> <li>• 125 ks</li> <li>• Principle Investigator: Emil Rivera-Thorsen</li> </ul>
	<p><b>European Southern Observatory</b> Period 103 <span style="float: right;"><b>2019</b></span></p> <ul style="list-style-type: none"> <li>• Title: <i>“The influence of geometry on the output of ionizing radiation: a unification scenario for extreme starbursts”</i></li> <li>• Proposal ID: 0103.B-0845(A)</li> <li>• Principle Investigator: Matthew Hayes</li> </ul>
	<p><b>Hubble Space Telescope</b> Cycle 26 <span style="float: right;"><b>2018</b></span></p> <ul style="list-style-type: none"> <li>• Title: <i>“The Low-Redshift Lyman Continuum Survey”</i></li> <li>• Proposal ID: 15526</li> <li>• Orbits: 134</li> <li>• Principle Investigator: Anne Jaskot</li> </ul>

- Hubble Space Telescope Cycle 26** **2018**
- Title: “*CLUES to galaxy evolution: young star clusters as engines of galactic feedback*”
  - Proposal ID: 15527
  - Orbits: 60
  - \$20,000 of funding awarded
  - Principle Investigator: Angela Adamo
- Hubble Space Telescope Cycle 26** **2018**
- Title: “*Lyman continuum leakage in  $z$  0.3 - 0.4 dwarf compact star-forming galaxies with stellar masses  $< 10^8 M_{\odot}$* ”
  - Proposal ID: 15639
  - Orbits: 45
  - \$59,992 of funding awarded
  - Principle Investigator: Yuri Izotov
- NRAO Very Large Array** **2018**
- Title: “*Molecular gas content of Milky Way progenitors at  $z \sim 1 - 3$* ”
  - Principle Investigator: Johan Richard & Miroslava Dessauges
- IRAM/NOEMA** **2018**
- Title: “*CO survey of the most strongly lensed galaxies*”
  - Principle Investigator: Miroslava Dessauges
- Hubble Space Telescope Mid-cycle, Cycle 25** **2018**
- Title: “*Resolving Extreme High-Ionization UV Emission-Line Diagnostics in Preparation for JWST*”
  - Proposal ID: 15465
  - Orbits: 10
  - Principle Investigator: Danielle Berg
- James Webb Space Telescope Early Release Science Program** **2017**
- Title: “*TEMPLATES: Targeting Extremely Magnified Panchromatic Lensed Arcs and Their Extended Star formation*”
  - Role: Science Collaborator
  - Proposal ID: 1355
  - Principle Investigator: Jane Rigby
- Hubble Space Telescope Mid-cycle, Cycle 25** **2017**
- Title: “*The first UV emission line spectrum of a strong low- $z$  Lyman continuum leaker - a key to studying the sources of cosmic reionization*”
  - Proposal ID: 15433
  - Principle Investigator: Daniel Schaerer
- Hubble Space Telescope AR proposal, Cycle 25** **2017**
- Title: “*Interpreting HST UV Spectra of Galactic Winds Using Radiative Transfer of Hydrodynamic Galaxy Simulations in yt*”
  - Proposal ID: 15059
  - Principle Investigator: Hassen Yesuf

	<b>IRAM/NOEMA</b>	<b>2017</b>
	<ul style="list-style-type: none"> <li>Title: “<i>Molecular gas in nearby analogs of cosmic reionization sources</i>”</li> <li>Principle Investigator: Daniel Schaerer</li> </ul>	
	<b>Magellan/MagE</b>	<b>2017</b>
	<ul style="list-style-type: none"> <li>Title: “<i>Spatially Resolved Rest-UV-to-Optical Spectroscopy of A Distant Starburst</i>”</li> <li>Principle Investigator: Matt Bayliss</li> </ul>	
	<b>ALMA Cycle 2</b>	<b>2013</b>
	<ul style="list-style-type: none"> <li>Title: “<i>Multi-Phase Imaging of the Outflow from the Edge-On Starburst Galaxy NGC 3628</i>”</li> <li>Principle Investigator: Satoki Matsushita</li> <li>Proposal ID: 2013.1.00087S</li> </ul>	
<b>MENTORING EXPERIENCE</b>	<b>Mentored Students</b>	<b>2017–present</b>
	Designed and led masters projects with Simon Gazagnes, Marianne Girard, Grace Olivier, and Sébastien Martinet. Two students have published papers on their work (Gazagnes et al. 2018; Girard et al. 2019) and there are two more papers currently in preparation. Importantly, I helped Simon Gazagnes and Sébastien Martinet write and defend their masters thesis and navigate the pathways towards graduate school in Groningen and Geneva.	
<b>AWARDS AND PRIZES</b>	<b>Hubble Fellow</b>	<b>2019</b>
	<b>AAS Doxsey Dissertator Prize</b>	<b>2015</b>
	<ul style="list-style-type: none"> <li>American Astronomical Society (AAS) prize granted to eight of the 130 dissertators for travel aid to the 2016 winter AAS meeting.</li> </ul>	
<b>PUBLIC OUTREACH</b>	<b>New Scientist</b>	<b>2016</b>
	<ul style="list-style-type: none"> <li>Article featuring my research in the <i>New Scientist</i> Magazine</li> <li>Title: “Hyperactive galaxy could run out of gas in just 8 million years”</li> </ul>	
<b>ACADEMIC SERVICE</b>	<b>Refereed Papers</b>	<b>2016–present</b>
	<ul style="list-style-type: none"> <li>I have refereed eight manuscripts for the <i>Astrophysical Journal</i>, <i>Monthly Notices of the Royal Astronomical Society</i>, <i>Galaxies Review</i>, and <i>Astronomy &amp; Astrophysics</i>.</li> </ul>	
<b>FIRST AUTHOR PUBLICATIONS</b>	<b>First and Co-Author Citations (8/20/19): 416</b>	<b>H-index: 12</b>
	<ol style="list-style-type: none"> <li><b>Chisholm, J.</b>, Rigby, J. R.; Bayliss, M.; Berg, D. A.; Dahle, H.; Gladders, M.; Sharon, K., “<i>Constraining the metallicities, ages, star formation histories, and ionizing continua of extragalactic massive star populations</i>”</li> <li><b>Chisholm, J.</b>, Tremonti, C., Leitherer, C., “<i>Metal-enriched galactic outflows shape the mass-metallicity relationship</i>”, 2018, <i>MNRAS</i>, 481, 1690C (8 citations)</li> <li><b>Chisholm, J.</b>, Gazagnes S., Schaerer D., Verhamme A., Rigby J., Bayliss M., “<i>Accurately predicting the escape fraction of ionizing photons using restframe ultraviolet absorption lines</i>”, 2018, <i>A&amp;A</i>, 616A, 30C (17 citations)</li> <li><b>Chisholm, J.</b>, Bordoloi, R., Rigby, J. R., Bayliss, M., “<i>Feeding the fire: tracing the mass-loading of <math>10^7</math> K galactic outflows with O VI absorption</i>”, 2018, <i>MNRAS</i>, 474, 1688C (8 citations)</li> <li><b>Chisholm, J.</b>, I. Orlitová, D. Schaerer, A. Verhamme, G. Worseck, Y. I. Izotov, T. X. Thuan, and N. G. Guseva, “<i>Do galaxies that leak ionizing photons have extreme outflows?</i>”, 2017, <i>A&amp;A</i>, 605A, 67C (24 citations)</li> </ol>	

6. **Chisholm, J.**, Tremonti, Christy A., Leitherer, Claus, Chen, Yanmei, “*The mass and momentum outflow rates of photoionized galactic outflow*”, 2017, MNRAS, 469, 4831C (25 citations)
7. **Chisholm, J.**, Tremonti, C., Leitherer, C., Chen, Y., “*A Robust Measurement of the Star Formation Driven Mass Outflow Rate of NGC 6090*”, 2016, MNRAS, 463, 541C (16 citations)
8. **Chisholm, J.**, Matsushita, S., “*The Molecular Baryon Cycle of M 82*”, 2016, ApJ, 830, 72C (7 citations)
9. **Chisholm, J.**, Tremonti, C., Leitherer, C., Chen, Y., Wofford, A., “*Shinning a Light on Galactic Outflows: Photo-ionized Outflows*”, 2016, MNRAS, 457, 3133 (28 citations)
10. **Chisholm, J.**, Tremonti, C., Leitherer, C., Chen, Y., Wofford, A., Lundgren, B., (2015) “*Scaling Relations Between Warm Galactic Outflows and Their Host Galaxies*”, 2015, ApJ, 811, 149C (58 citations)

**CO-AUTHOR  
PUBLICATIONS**

1. Berg, Danielle A.; **Chisholm, John**; Erb, Dawn K.; Pogge, Richard; Henry, Alaina; Olivier, Grace M., “*Intense C IV and He II Emission in z = 0 Galaxies: Probing High-energy Ionizing Photons*”, 2019, ApJ, 878L, 3B
2. Schaerer, D., Izotov, Y. I., Nakajima, K., Worseck, G., **Chisholm, J.**, Verhamme, A., Thuan, T. X., de Barros, S.; “*Intense C III]  $\lambda\lambda 1907, 1909$  emission from a strong Lyman continuum emitting galaxy*”, 2018, A&A, 616L, 14S
3. Gazagnes S., **Chisholm, J.**, Schaerer D., Verhamme A., Rigby J., Bayliss M., “*Neutral gas properties of Lyman continuum emitters: column densities and covering fractions from UV absorption lines*”, 2018, A&A, 616A, 29G
4. Rigby, J. R., Bayliss, M. B., **Chisholm, J.**, Bordoloi, R., Sharon, K., Gladders, M. D., Johnson, T., Paterno-Mahler, R., Wuyts, E., Dahle, H., Acharyya, A., *The Magellan Evolution of Galaxies Spectroscopic and Ultraviolet Reference Atlas (MEGASaURA) II: Stacked Spectra*, 2018, ApJ, 853, 87R
5. Rigby, J. R., Bayliss, M. B., Sharon, K., Gladders, M. D., **Chisholm, J.**, Dahle, H., Johnson, T., Paterno-Mahler, R., Wuyts, E., Kelson, D. D., *The Magellan Evolution of Galaxies Spectroscopic and Ultraviolet Reference Atlas (MEGASaURA) I: The Sample and the Spectra*, 2018, AJ, 155, 104R
6. Jin, Yifei, Chen, Yanmei, Shi, Yong, Tremonti, C. A., Bershady, M. A., Merrifield, M., Emsellem, E., Fu, Hai, Wake, D., Bundy, K., Lin, Lihwai, Argudo-Fernandez, M., Huang, Song, Stark, D. V., Storch-Bergmann, T., Bizyaev, D., Brownstein, J., **Chisholm, J.**, Guo, Qi, Hao, Lei, Hu, Jian, Li, Cheng, Li, Ran, Masters, K. L., Malanushenko, E., Pan, Kaike, Riffel, R. A., Roman-Lopes, A., Simmons, A., Thomas, D., Wang, Lan, Westfall, K., Yan, Renbin, “*SDSS-IV MaNGA: properties of galaxies with kinematically decoupled stellar and gaseous components*”, 2016, MNRAS, 463, 913J
7. Chen, Yan-Mei, Shi, Yong, Tremonti, Christy A., Bershady, Matt, Merrifield, Michael, Emsellem, Eric, Jin, Yi-Fei, Huang, Song, Fu, Hai, Wake, David A., Bundy, Kevin, Stark, David, Lin, Lihwai, Argudo-Fernandez, Maria, Bergmann, Thaisa Storch, Bizyaev, Dmitry, Brownstein, Joel, Bureau, Martin, **Chisholm, John**, Drory, Niv, Guo, Qi, Hao, Lei, Hu, Jian, Li, Cheng, Li, Ran, Lopes, Alexandre Roman, Pan, Kai-Ke, Riffel, Rogemar A., Thomas, Daniel, Wang, Lan, Westfall, Kyle, Yan, Ren-Bin, “*The growth of the central region by acquisition of counterrotating gas in star-forming galaxies*”, 2016, NatCo, 713269C
8. Wood, C. M., Tremonti, C. A., Calzetti, D., Leitherer, C., **Chisholm, J.**, Gallagher, J. S., (2015), “*Supernova-driven outflows in NGC 7552: a comparison of H  $\alpha$  and UV tracers*”, MNRAS, 452, 2712W

9. Chen, Y.-M., Kauffmann, G., Tremonti, C. A., White, S., Heckman, T. M., Kovač, K., Bundy, K., **Chisholm, J.**, Maraston, C., Schneider, D. P., Bolton, A. S., Weaver, B. A., Brinkmann, J., (2012), “*Evolution of the most massive galaxies to  $z = 0.6$  - I. A new method for physical parameter estimation*”, MNRAS, 421, 314C
10. Den Hartog, E. A., **Chisholm, J. P.**, Lawler, J. E., “*Radiative lifetimes of neutral erbium*”, 2010, JPhB, 43o5004D
11. Lawler, J. E., **Chisholm, J.**, Nitz, D. E., Wood, M. P., Sobeck, J., Den Hartog, E. A., (2010), “*Atomic transition probabilities of Ce I from Fourier transform spectra*”, JPhB, 43, 5701L

## TALKS AND POSTERS

1. “*Metal-enriched galactic outflows shape the Mass-Metallicity Relation*”. Contributed talk at Feedback and its Role in Galaxy Formation in Spetses, Greece, June 26, 2019.
2. “*What lurks below the Lyman Limit? Unearthing the unseen ionizing continua of extragalactic massive star populations*”. **Invited colloquium** at the Carnegie Observatories, May 24, 2019.
3. “*What lurks below the Lyman Limit? Unearthing the unseen ionizing continua of extragalactic massive star populations*”. **Invited colloquium** at the University of California–Santa Barbara, May 2, 2019.
4. “*How Ionizing Photons Escape Galaxies to Reionize the Universe*”. **Invited talk** at the University of California–Santa Cruz, November 9, 2018.
5. “*How Ionizing Photons Escape Galaxies to Reionize the Universe*”. **Invited colloquium** at the University of Wisconsin–Madison, October 25, 2018.
6. “*How Ionizing Photons Escape Galaxies to Reionize the Universe*”. **Invited seminar** at the University of Texas–Austin, October 11, 2018.
7. “*The escape mechanism and escape fractions of ionizing photons from star-forming galaxies*”. Contributed talk at “Escape of Lyman radiation from galactic labyrinths” in Kolymbari, Greece, September 14, 2018.
8. “*The observed mass and metal outflow rates shape the mass-metallicity relation*”. Contributed poster at “The role of feedback in galaxy formation: from small-scale winds to large-scale outflows” in Potsdam, Germany, September 3, 2018.
9. “*Accurately predicting the escape fraction of ionizing photons using restframe ultraviolet absorption lines*”. Contributed talk at “Rise and Shine” in Strasbourg, France, June 20, 2018.
10. “*Illuminating the sources of cosmic reionization with local analogs*”. **Invited colloquium** at the Ohio State University in Columbus, Ohio, USA, on January 25, 2018.
11. “*Galactic outflows in the JWST era*”. **Invited talk** at “Characterizing Galaxies with Spectroscopy with a view for JWST” at the Lorentz Center in Leiden, The Netherlands, on October 25, 2017.
12. “*The Mass and Metal Outflow Rates of Star-formation Driven Galactic Outflows*”. Contributed talk at the “European Week of Astronomy and Space Science” in Prague Czech Republic, on June 26, 2017.
13. “*Removing Mass and Metals from Galaxies with Galactic Outflows*”. Seminar at University of Geneva/EPFL on June 20, 2017.
14. “*The Metal Outflow Rates of Star Formation Powered Galactic Outflows*”. Contributed talk at the Space Telescope Science Institute Spring Symposium “The lifecycle of metals throughout the universe” in Baltimore Maryland, on April 26, 2017.

15. *“Do Galactic Outflows Enrich the Circum-Galactic Medium?”*. IMPS seminar at the University of California, Santa Cruz on December 13, 2016.
16. *“The Physical Conditions of Galactic Outflows”*. Seminar at the Centre de Recherche Astrophysique de Lyon in Lyon France, on November 4, 2016.
17. *“The Physical Conditions of Star Formation Drive Galactic Outflows”*. Contributed talk at “Crossing the Rubicon” in Santarcangelo di Romagna, on September 6, 2016.
18. *“Shining a light on star formation driven outflows: the physical conditions within galactic outflows”*. AAS talk in Kissimmee Florida, on January 6, 2016.
19. *“Shining a light on star formation driven outflows: the physical conditions within galactic outflows”* at the Northwestern University Theory Group meeting on November 6th 2015.
20. *“Shining a light on star formation driven outflows: the physical conditions within galactic outflows”* at the University of Maryland Theory Lunch talk on October 19th 2015.
21. *“Shining a light on star formation driven outflows: the physical conditions within galactic outflows”* at the Space Telescope Science Institute Galaxies Journal Club on October 16th 2015.
22. *“Shining a light on star formation driven outflows: the physical conditions within galactic outflows”* at the Harvard Center for Astrophysics Large Scale Seminar on October 13th 2015.
23. *“Galactic Outflow Scaling Relations and Their Impact on Galactic Evolution”*. Presented at “Drifting through the Cosmic Web: the Evolution of Galaxies within the Large Scale Structure” in Aix-en-Provence, France, on July 8<sup>th</sup> 2015.
24. *“Studying Stellar Feedback With Galactic Outflow Scaling Relations”*. Presented at “Star Formation Across Space and Time” in Noordwijk, the Netherlands, on November 12<sup>th</sup> 2014.
25. *“A Powerful [Ne V] Outflow from a Post-Starburst Galaxy”*, poster presented at “Gas, Stars and Black Holes in the Galaxy Ecosystem”, Leiden, the Netherlands, July 24th, 2012.
26. *“A Powerful [Ne V] Outflow from a Post-Starburst Galaxy, and Tracers of Warm-Hot Outflows”*, talk presented at “Galactic Winds of Change” in Sesto, Italy, July 20th, 2012.
27. *“Peculiarly strong [Ne V] emission from a Hot phase of a Post-Starburst Wind.”*, Poster presented at “The Baryon Cycle” in Irvine, California, June 15th, 2012.
28. *“Observing Star Formation Quenching In Action: A Powerful [Ne V] Outflow in a Post-Starburst Radio Galaxy ”*. Poster presented at the American Astronomical Society meeting in Austin, Texas, January 2012.
29. *“Detection of Galactic Winds in Stacked BOSS Spectra”*. Presented at the SDSS collaboration meeting in Cloudcroft New Mexico, on March 25<sup>th</sup> 2011.