

# RYAN C. HICKOX

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Observational astrophysicist. Interests include active galactic nuclei, galaxy evolution, large-scale structure of the Universe, the cosmic X-ray background, X-ray binary pulsars, analysis of data from *Chandra*, *NuSTAR*, *XMM-Newton*, *Hubble*, *Spitzer WISE*, and *Herschel* space telescopes and ground-based spectroscopy.

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## EDUCATION

**Harvard University** – Ph.D. in Astronomy, defended October 2007 (conferred June 2008)

**Yale University** – B.S. in Physics *magna cum laude*, May 2000

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## APPOINTMENTS

### **Department of Physics and Astronomy, Dartmouth College**

Associate Professor, 2017–present.

Assistant Professor, 2011–2017.

### **Department of Physics, Durham University**

STFC Postdoctoral Fellow, 2009–2011.

### **Smithsonian Astrophysical Observatory**

SAO Postdoctoral Fellow, 2007–2009. Supervisor: Christine Jones.

### **Department of Astronomy, Harvard University**

Ph.D. Candidate, 2002–2007, NASA GSRP Fellow and Harvard Merit Fellow.

Thesis: “Active Galactic Nuclei and the Unresolved Cosmic X-ray Background”

Advisors: Dr. Christine Jones & Prof. Ramesh Narayan.

### **Physics Department, Yale University**

Senior thesis research, 1999–2000. Experimental particle physics (neutral  $B$  meson oscillation) with data from the CDF detector at Fermilab. Advisor: Prof. Colin Gay.

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## FELLOWSHIPS, PRIZES, AND AWARDS

- Wetterhahn Memorial Award for Distinguished Scholarly or Creative Achievement (2017)
- NSF CAREER Award (2016–21) • Alfred P. Sloan Research Fellowship (2014–16)
- Dartmouth Class of 1962 Faculty Fellowship (2014–15) • STFC Postdoctoral Fellowship (2009–11)
- Einstein Fellowship (2009, declined) • Marshall Sherfield Fellowship (2009, declined)
- SAO Postdoctoral Fellowship (2007–2009) • NASA GSRP Fellowship (2005–2007)
- Harvard Merit Fellowship (2006–2007) • Harvard Distinction in Teaching (2004, 2005, 2006)
- Schultz Prize for experimental physics, Yale University (May 2000)

## TEACHING AND ADVISING

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### **Dartmouth College (2011–present)**

#### **Courses**

- *Astronomy 2/3*, “Exploring the Universe”, Fall 2012, Fall 2013, Fall 2015, Fall 2016, Fall 2017
- *Astronomy 15*, “Stars & the Milky Way”, Spring 2012, Spring 2013, Spring 2014, Spring 2016
- *Astronomy 19*, “Habitable Planets”, Spring 2017
- *Astronomy 25*, “Galaxies and Cosmology”, Winter 2014, Spring 2015
- *Astronomy 118*, “Observational Cosmology”, Winter 2012

#### **Current research group**

- Postdoctoral associates: M. DiPompeo (2015–present); L. Lanz (2016–present)
- PhD students: M. Jones (2012–present; NASA Jenkins Fellow 2015–18; GK-12 Fellow 2013-14), C. Carroll (2013–present; GK-12 Fellow 2014-15), M. Brumback (2014–present), W. Yan (2015–present)
- Undergraduates: R. Hviding '18, E. Golitzin '18, Z. Plante '18, J. Perlmutter '20.

#### **Previous members**

- Postdoctoral associates: K. Hainline (2012–15; now at U. of Arizona); F. Civano (2012–13; now at Harvard-Smithsonian Center for Astrophysics)
- PhD students: S. Cohen (starting 2013; Neukom Fellow, defended 2016; now at St. Paul’s School); C.-T. Chen (2011–2015; Neukom Fellow, defended 2015; now at Penn State) and C. Black (2012–13; now working with Prof. R. Fesen)
- Undergraduates: M. Oulmakki (summer 2012), S. Griffis (summer 2012), E. Soto (summer 2013), T. Whalen (2012–14), A. Zervos (2013–14), N. Golini (2015–16), A. Colon (2016), P. Gardner (2015–17), M. Lane (2016–17), F. Rentzeperis (2016–17)

#### **Residential**

House Professor for West House (2015–2019; <http://sites.dartmouth.edu/west-house>)

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### **Durham University (2009–2011)**

Supervisor for four students (3rd year and 4th year/Master’s). Leader of 2nd year undergraduate tutorials in the Department of Physics. Tutor (advisor) for ten first-year undergraduates, associated with St. Chad’s College.

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### **Harvard-Smithsonian CfA (2002–2009)**

Teaching Fellow for four Harvard undergraduate courses. Supervised six undergraduates at SAO, including serving as research mentor for four students in the SAO Summer Intern program, leading to two published papers (Nielsen *et al.* 2004; Hung *et al.* 2010), four AAS posters, and one *Chandra* symposium poster. Served as a Resident Tutor in Physics at Dunster House (undergraduate residential house community of approximately 400 students) from 2003–2007.

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### **Oundle School (2000–2002)**

The inaugural Peter Ling Fellow at Oundle School in Northamptonshire, England, the largest co-ed boarding school in the UK. On two-year teaching fellowship for young Americans, taught physics, coached sports, and served as Assistant Housemaster in a boarding house.

## RESEARCH GRANTS

- *Chandra X-ray Observatory* Data Analysis grant: “The *Chandra* Deep Wide-Field Survey: Completing the Next Generation of *Chandra* Extragalactic Surveys” – total Dartmouth award \$295K.
- *XMM-Newton* Cycle 15 Data Analysis grant (2016–17), “Probing the warped inner accretion flow in SMC X-1 with *XMM* and *NuSTAR*” – total Dartmouth award \$51K.
- NSF IUSE grant (2016–19): “Improving Communication Abilities of Undergraduate Science Students Through Public Outreach and Education” (subaward from Carthage College, PI: D. Arion) – total Dartmouth award \$73K.
- NASA Astrophysics Data Analysis Program grant (2016–2018): “Unveiling hidden black holes in the cosmic web: Dark matter halos of WISE quasars from Planck CMB lensing” – total award \$335K, including subaward to University of Wyoming.
- NSF CAREER award (2016–2021): “CAREER: The Hidden Monsters: Cosmic Evolution of Obscured Supermassive Black Holes” – total award \$672K.
- NASA (subaward from Caltech, 2015–2018): “NuSTAR Extragalactic Survey and AGN Science” – total Dartmouth award \$261K.
- *NuSTAR* Cycle 1 Data Analysis grant (2015–16), “Superorbital variation of LMC X-4: Exploring the inner accretion flow with *NuSTAR* and *Suzaku*” – total Dartmouth award \$40K
- NSF Astronomy and Astrophysics research grant (2015–2017): “Collaborative Research: Cross-correlation of WISE quasars with the Planck CMB lensing maps: A new probe of black holes and large-scale structure” (*Collaborative with Univ. of Wyoming*) – total Dartmouth award \$166K.
- NASA Jenkins Graduate Fellowship (2015–2018): “Modeling the evolution of galaxies and black holes in X-rays with *NuSTAR* and *Chandra*” (PI Hickox, graduate student M. Jones) – total Dartmouth award \$165K.
- Alfred P. Sloan Fellowship (2014–2016): “The search for hidden supermassive black holes” – total award \$50K.
- NSF Astronomy and Astrophysics research grant (2012–2015): “Collaborative Research: The Hidden Side of Rapidly Growing Black Holes: Host Masses and Evolution of Obscured Quasars with SDSS and WISE” (*Collaborative with Univ. of Wyoming*) – total Dartmouth award \$248K.
- NASA Astrophysics Data Analysis Program grant (2012–2015): “The hidden side of rapidly growing black holes: Host masses and evolution of obscured quasars with *WISE*, *Chandra*, *XMM*, *Spitzer* and *GALEX*” (*Institutional PI, collaborative with Univ. of Wyoming*) – total Dartmouth award \$158K.

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## OBSERVING AND ARCHIVE PROGRAMS

*PI or primary author of successful proposals for the following programs:*

- *Chandra* Cycle 18 observations; PI: R. Hickox, “The *Chandra* Deep Wide-Field Survey: Completing the next generation of extragalactic *Chandra* surveys”
- *XMM-Newton* Cycle 15 observations (Priority B, Joint with *NuSTAR*; PI: R. Hickox), “Probing the warped inner accretion flow in SMC X-1 with *XMM* and *NuSTAR*”
- *NuSTAR* Cycle 1 observations (Priority A, Joint with *Suzaku*; PI: R. Hickox), “Superorbital variation of LMC X-4: Exploring the inner accretion flow with *NuSTAR* and *Suzaku*”
- *NuSTAR* Cycle 1 observations (Priority C; PI: R. Hickox), “The search for extreme absorption in “typical” WISE-selected obscured quasars”
- IRAM Plateau de Bure Interferometer observations, summer/fall 2012 (PIs: R. Hickox and

J. Geach), “The highest density starbursts in the Universe”

- *XMM-Newton* Cycle 10 proposal (PI: R. Hickox), “A candidate “intermediate-mass” black hole in the dwarf starburst galaxy He 2-10”
- *Chandra* Cycle 9 DDT archive grant (PI: R. Hickox), “Ultra-deep X-ray spectra in the CDF-S: a new class of hard, unabsorbed X-ray AGN?”
- *Chandra* Cycle 9 archive grant (PI: C. Jones), “Harnessing the full power of *Chandra* surveys”
- *Suzaku* Cycle 3 observations (PI: R. Hickox), “Supermassive Black Hole Accretion in Obscured AGN and XBONGs”
- *Suzaku* Cycle 2 observations (PI: R. Hickox), “Superorbital variation in LMC X-4: Exploring the accretion flow”
- *XMM-Newton* Cycle 7 observations (PI: C. Jones), “Exploring Supermassive Black Hole Accretion in  $z > 3$  AGN, Obscured AGN and XBONGs”
- *Spitzer* Cycle 5 observations (PI: C. Jones), “Evolution of AGN and galaxies from  $z \sim 1$ : IRAC observations of DEEP2”
- SALT Fabry-Perot spectroscopy of nearby AGN (2015–16)
- SALT optical spectroscopy (kinematics and redshifts of obscured quasars, 2011–2016)
- MDM/OSMOS optical spectroscopic observations (caustic masses of C4 SDSS clusters, morphology of AGN narrow-line regions, 2012–2016)
- MMT Hectospec observations (seven survey runs covering the Boötes and XDEEP2 fields, 2008–2011; PIs: R. Hickox and S. Murray)

*Co-I on the following programs:*

- SOFIA Cycle 5 observations (PI C. Tremonti), “Probing Dust-obscured Star Formation and AGN Activity in Massive Ultra-compact Galaxies”
- *HST* Cycle 23 observations (PI C. Tremonti), “Direct Imaging of Galactic Winds in Extreme Starburst Galaxies”
- *HST* Cycle 22 observations (PI A. Diamond-Stanic), “How Compact is the Stellar Mass in Eddington-Limited Starbursts?”
- *Chandra* Cycle 15 GO observations (PI A. Reines), “AGN-triggered star formation in the dwarf galaxy He 2-10?”
- *Chandra* Cycle 15 archive grant (PI J. Greene), “The demographics of massive black holes in dwarf galaxies”
- *Chandra* Cycle 14 archive grant (PI A. Goulding), “Harnessing the full power of the widest *Chandra* field: X-ray stacking of AGN & galaxies in the Sloan Digital Sky Survey”
- *Suzaku* Cycle 7 GO observations (PI: D. Stern), “WISE J1819+4532: an Obscured, Hyperluminous ULIRG/AGN at  $z \sim 2$ ”
- *Herschel* Cycle 2 GO observations (PI: N. Zakamska), “Feedback from luminous obscured quasars”
- *Chandra* Cycle 12 GTO observations (PI: S. Murray), “Detailed X-ray spectra of IR-selected AGN in the Boötes field”
- *Chandra* Cycle 11 observations (joint with *HST*; PI: C. Tremonti), “After the fall: Fading AGN in post-starburst galaxies”
- *Chandra* Cycle 10 observations (PI: A. Stanford), “The Role of AGN in Massive Galaxy Formation”
- *Spitzer* Cycle 5 observations (PI: W. Forman), “Testing the Unified Model with a Complete Sample of Hard X-ray Selected AGN”
- *Spitzer* Cycle 5 observations (PI: M. Werner), “Infrared Search for Hidden AGN”

## PROFESSIONAL ACTIVITIES

- Inaugural House Professor, West House, Dartmouth College, 2015–2019
- Referee for *Nature*, *The Astrophysical Journal*, *Astronomy & Astrophysics*, *Monthly Notices of the Royal Astronomical Society*, *Proceedings of the Astronomical Society of Japan*, *Advances in Astronomy*, *New Astronomy*
- Member of the Science and Technology Development Team for the *Lynx* NASA X-ray Mission Concept (2016–2019) (<http://www.wastro.msfc.nasa.gov/lynx/>)
- Nominating Committee of the American Astronomical Society (2017–2020)
- Organizer for international workshop (~100 participants) “The Hidden Monsters: Obscured AGN and Connections to Galaxy Evolution in the Era of *NuSTAR* and *WISE*”, Dartmouth, 8–12 August 2016 (<http://www.dartmouth.edu/~hiddenmonsters>)
- Organizer of 2015 New England Regional Quasar and AGN Meeting (NERQUAM), Dartmouth College, 4 June 2015 (<http://www.dartmouth.edu/~hickox/NERQUAM>)
- Co-organizer and member of Science Organizing Committee for international workshop (~100 participants) “AGN vs. Star Formation: The fate of gas in galaxies”, Durham, UK, 28 July–1 Aug. 2014 (<http://astro.dur.ac.uk/AGNvsSF>)
- Organizer for international workshop (~60 participants) “Black Hole Feedback 2012”, Dartmouth, 30 July–3 Aug. 2012 (<http://www.dartmouth.edu/~bhfeedback2012>)
- Chair of Local Organizing Committee for large international conference (~360 participants) on “Galaxy Formation”, Durham, UK, 18–22 July 2011 (<http://astro.dur.ac.uk/Gal2011>)
- Primary organizer (with D. Alexander) of major international workshop “What Drives the Growth of Black Holes?”, Durham, UK, 26–29 July 2010 (<http://astro.dur.ac.uk/growthofblackholes>)
- Member of Science Organizing Committee for: Elusive AGN in the Next Era, George Mason University, June 2017; From Chandra to Lynx: Taking the Sharpest X-ray Vision Fainter and Farther, Harvard University, August 2017
- Member of the Moving Dartmouth Forward Presidential Steering Committee, 2014–15
- Member of Dartmouth departmental and College committees: Department Graduate Committee (2012–2015), Undergrad Curriculum Committee (2014–16), and Strategic Planning Committee (2014); College Committee on Student Life (2014) and Committee on Off-Campus Activities (2016)
- Member of the Science Team for the *NuSTAR* X-ray observatory (<http://www.nustar.caltech.edu>), launched June 2012. Member of Extragalactic Surveys and Obscured AGN working groups.
- Member of team for proposed *Wide-Field X-Ray Telescope* mission (<http://wfxr.pha.jhu.edu>), leading predictions for analyses of clustering and host galaxies of AGN.
- Contributed to the science cases for proposed *NHXM*, *Generation-X*, and *SMART-X* missions.
- Member of NOAO Extragalactic TAC (2011–2013)
- Panelist for Guest Observer review for multiple NASA missions
- Panelist for National Science Foundation proposal reviews
- External grant and proposal reviewer for the National Science Foundation, German Research Foundation, European Research Commission, Netherlands Organisation for Scientific Research, South Africa National Research Foundation, and the Israel Science Foundation
- Developed STACKFAST code for rapid, flexible X-ray stacking analyses.

- Member of High Energy Astrophysics Division, American Astronomical Society, and the International Astronomical Union

## OUTREACH AND PRESS

- Organizer of order-of-magnitude estimation workshops as part of NSF program: <http://sites.dartmouth.edu/estimation>.
- Organizer of AstroConnect program linking schools and scientists over Skype: <http://sites.dartmouth.edu/astroconnect>.
- Participant and Co-I in Science Education and Astronomy Outreach program coordinated with the Appalachian Mountain Club and Carthage College, funded by NSF IUSE (2017–2019).
- Contributed to NSF-funded teacher workshops at the University of Wyoming: <http://www.uwpd.org/LASSI/>.
- Contributed Chapter on "What is Astronomy?" to *What Are the Arts and Sciences?*, Daniel Rockmore, Ed., University Press of New England, 2017
- Featured in more than a dozen articles in Dartmouth publications including Dartmouth News, The Dartmouth, and The Dartmouth Review.
- Multiple press releases on compact star-forming galaxy research, and appearance on NHPR and Australian Broadcasting Company podcast, December 2014 <http://now.dartmouth.edu/2015/01/an-ancient-galaxy-tells-dartmouth-astronomers-new-tales/>.
- Featured in cover article on “Supergalaxies”, All About Space magazine issue 19, December 2013
- Dartmouth press release on SALT quasar research, July 2013: [http://www.eurekalert.org/pub\\_releases/2013-07/dc-snl072413.php](http://www.eurekalert.org/pub_releases/2013-07/dc-snl072413.php)
- ESO press release on submillimeter galaxies: <http://www.eso.org/public/news/eso1206/>. Featured by BBC, Space.com, Astronomy.com, Astronomy Now, and others worldwide.
- Presentation and observing session for Camp Dartmouth attendees, 29 July 2016
- Multiple presentations on astronomy for Family Weekends and Dartmouth Bound
- Took part in Dartmouth Science Pub on “Black Holes: Monsters of the Universe” with Prof. Jenny Greene (Princeton) at Murphy’s, Hanover, 17 January 2013
- Guest presenter to Governor’s Institute of Vermont Astronomy Program, Lyndon State College, 2016 and 2017 <https://www.giv.org/astronomy/>
- Numerous presentations at astronomy clubs and schools, including 17 public talks in the UK 2010–12 as part of STFC Fellowship.
- Expert-in-Residence at African Leadership Academy, Johannesburg, South Africa, February 2009. Week-long visit to pan-African secondary school for seminars on astronomy and astrophysics.
- Appeared as featured astronomer discussing quasars and AGN on the “Pulsars & Quasars” episode of the TV show *The Universe* on the History Channel, aired October 2009.
- *Chandra* press release for obscured AGN research, 2007: [http://chandra.harvard.edu/press/07\\_releases/press\\_031207.html](http://chandra.harvard.edu/press/07_releases/press_031207.html)

## PUBLICATIONS

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### JOURNAL ARTICLES

115 refereed journal articles published or under review. Papers are organized into three groups based on my level of contribution to the research presented in the paper. Most publications here are in three journals: *The Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, and *Astronomy & Astrophysics*. These are the world's three main highly-regarded journals that are dedicated to new results in astrophysics.

*Papers with a primary intellectual or observational contribution (papers led by me or my advisees/postdocs marked with ☆)*

1. ☆ “The [OIII] profiles of infrared-selected active galactic nuclei: More powerful outflows in the obscured population”, M.A. DiPompeo, **R.C. Hickox**, J.C. Runnoe, C.M. Carroll, J.R. Mullaney, T.C. Fischer, 2017, *The Astrophysical Journal* submitted
2. ☆ “A Possible Phase-Dependent Absorption Feature in the Transient X-ray Pulsar SAX J2103.5+4545”, Brumback, M. C., **Hickox, R. C.**, Fürst, F. S., Pottschmidt, K., Tomsick, J., Hemphill, P, Wilms, J., Ballhausen, R., 2017, *The Astrophysical Journal* in press (arXiv:1711.11105)
3. ☆ “Characterizing the WISE-selected Heavily Obscured Quasar Population with Optical Spectroscopy from the Southern African Large Telescope”, Raphael E. Hviding, **Ryan C. Hickox**, Kevin N. Hainline, Christopher M. Carroll, Michael A. DiPompeo, Wei Yan, and Mackenzie L. Jones, 2017, *Monthly Notices of the Royal Astronomical Society* in press (arXiv:1711.01269)
4. ☆ “Composite spectral energy distributions and infrared–optical colors of type 1 and type 2 quasars”, **Ryan C. Hickox**, Adam D. Myers, Jenny E. Greene, Kevin N. Hainline, Nadia L. Zakamska, Michael A. DiPompeo, 2017, *The Astrophysical Journal*, 849, 53 (arXiv:1709.04468)
5. ☆ “The characteristic halo masses of half-a-million WISE-selected quasars”, M. A. DiPompeo, **R. C. Hickox**, S. Eftekharzadeh, A. D. Myers, 2017, *Monthly Notices of the Royal Astronomical Society*, 469, 4630 (arXiv:1705.05306)
6. “Galaxy-scale bars in late-type Sloan Digital Sky Survey Galaxies Do Not Influence the Average Accretion Rates of Supermassive Black Holes”, A. D. Goulding, E. Matthaey, J. E. Greene, **R. C. Hickox**, D. M. Alexander, W. R. Forman, C. Jones, B. D. Lehmer, S. Griffis, S. Kanev & M. Oulmakki, 2017, *The Astrophysical Journal*, 843, 135 (arXiv:1705:08895)
7. ☆ “Do You See What I See? Exploring the Consequences of Luminosity Limits in Black Hole–Galaxy Evolution Studies”, Mackenzie L. Jones, **Ryan C. Hickox**, Simon J. Mutch, Darren J. Croton, Andrew F. Ptak, Michael A. DiPompeo, 2017, *The Astrophysical Journal*, 843, 125 (arXiv:1706:00430)
8. ☆ “The X-ray and Mid-Infrared Luminosities in Luminous Type 1 Quasars”, Chien-Ting J. Chen, **Ryan C. Hickox**, *et al.*, 2017, *The Astrophysical Journal*, 837, 145 (arXiv:1701.05207)
9. ☆ “A unifying evolutionary framework for infrared-selected obscured and unobscured quasar host haloes”, M. A. DiPompeo, **R. C. Hickox**, A. D. Myers, J. E. Geach, 2017, *Monthly Notices of the Royal Astronomical Society*, 464, 3526 (arXiv:1610.03493)
10. ☆ “Star Formation and Supercluster Environment of 107 Nearby Galaxy Clusters”, Seth A. Cohen, **Ryan C. Hickox**, Gary A. Wegner, Maret Einasto, Jaan Vennik, 2017, *The Astrophysical Journal*, 835, 56 (arXiv:1612.04813)

11. “Multi-epoch Spectroscopy of Dwarf Galaxies with AGN Signatures: Identifying Persistent Broad  $H\alpha$  Emission”, Vivienne F. Baldassare, Amy E. Reines, Elena Gallo, Jenny E. Greene, Or Graur, Marla Geha, Kevin Hainline, Christopher Carroll, **Ryan C. Hickox**, 2016, *The Astrophysical Journal*, 829, 57 (arXiv:1605.05731)
12. ★ “The Impact of the Dusty Torus on Obscured Quasar Halo Mass Measurements”, M. A. DiPompeo, J. C. Runnoe, **R. C. Hickox**, A. D. Myers, J. E. Geach, 2016, *Monthly Notices of the Royal Astronomical Society*, 460, 175 (arXiv:1604.06811)
13. ★ “The Intrinsic Eddington Ratio Distribution of Active Galactic Nuclei in Young Galaxies From the Sloan Digital Sky Survey”, Mackenzie L. Jones, **Ryan C. Hickox**, Christine S. Black, Kevin N. Hainline, Michael A. DiPompeo, Andy D. Goulding, 2016, *The Astrophysical Journal*, 826, 12 (arXiv:1605.01739)
14. ★ “A tale of two narrow-line regions: Kinematics, ionization structure, and spectral energy distributions for a local pair of merging obscured active galaxies”, Kevin N. Hainline, **Ryan C. Hickox**, Chien-Ting Chen, Christopher M. Carroll, Mackenzie L. Jones, Alexandros S. Zervos, Andrew D. Goulding, 2016, *The Astrophysical Journal*, 823, 42 (arXiv:1603.06589)
15. ★ “Updated measurements of the dark matter halo masses of obscured quasars with improved WISE and Planck data”, M. A. DiPompeo, **R. C. Hickox**, A. D. Myers, 2016, *Monthly Notices of the Royal Astronomical Society*, 456, 924 (arxiv:1511.04469)
16. ★ “The *NuSTAR* Extragalactic Surveys: Overview and Catalog from the COSMOS Field”, Francesca M. Civano, **Ryan C. Hickox**, *et al.*, 2015, *The Astrophysical Journal*, 808, 185 (arXiv:1511.04185)
17. “The *NuSTAR* Extragalactic Surveys: Initial Results and Catalog from the Extended Chandra Deep Field South”, James R. Mullaney *et al.*, 2015, *The Astrophysical Journal*, 808, 184 (arXiv:1511.04186)
18. ★ “Star formation and relaxation in 379 nearby galaxy clusters”, Seth A. Cohen, **Ryan C. Hickox**, Gary A. Wegner, 2015, *The Astrophysical Journal*, 806, 85 (arXiv:1504.05191)
19. ★ “Variable Hard X-ray Emission from the Candidate Accreting Black Hole in Dwarf Galaxy Henize 2–10”, Thomas J. Whalen, **Ryan C. Hickox**, Amy E. Reines, Jenny E. Greene, Gregory R. Sivakoff, Kelsey E. Johnson, David M. Alexander, Andy D. Goulding, 2015, *The Astrophysical Journal*, 806, 37 (arXiv:1504.03331)
20. ★ “A connection between obscuration and star formation in luminous quasars”, Chien-Ting J. Chen, **Ryan C. Hickox**, Stacey Alberts, Chris M. Harrison, David M. Alexander, Roberto Assef, Michael J. I. Brown, Agnese Del Moro, William R. Forman, Andrew D. Goulding, Kevin N. Hainline, Christine Jones, Christopher S. Kochanek, Stephen S. Murray, Alexandra Pope, Emmanouel Rovilos, Daniel Stern, 2015, *The Astrophysical Journal*, 802, 50 (arXiv:1501.04959)
21. “Weighing obscured and unobscured quasar hosts with the CMB”, M. A. DiPompeo, A. D. Myers, **R. C. Hickox**, J. E. Geach, G. Holder, K. N. Hainline, S. W. Hall, 2015, *Monthly Notices of the Royal Astronomical Society*, 446, 3492 (arXiv:1411.0527)
22. “Stellar feedback as the origin of an extended molecular outflow in a starburst galaxy”, J. E. Geach, **R. C. Hickox**, A. M. Diamond-Stanic, M. Krips, G. H. Rudnick, C. A. Tremonti, P. H. Sell, A. L. Coil, J. Moustakas, 2014, *Nature*, 516, 68 (arXiv:1412.1091)
23. ★ “A spectroscopic survey of *WISE*-selected obscured quasars with the Southern African Large Telescope”, Kevin N. Hainline, **Ryan C. Hickox**, Christopher M. Carroll, Adam D. Myers, Michael A. DiPompeo, Laura Trouille, 2014, *The Astrophysical Journal*, 795, 124 (arXiv:1409.4773)



24. “The Angular Clustering of Infrared-Selected Obscured and Unobscured Quasars”, Michael A. DiPompeo, Adam D. Myers, **Ryan C. Hickox**, James E. Geach, Kevin N. Hainline, 2014, *Monthly Notices of the Royal Astronomical Society*, 442, 3443 (arXiv:1406.0778)
25. “Obscuration by gas and dust in luminous quasars”, Shawn Usman, Stephen S. Murray, **Ryan C. Hickox**, Mark Brodwin, 2014, *The Astrophysical Journal Letters*, 788, 3 (arXiv:1406.6099)
26. ★ “Gemini Long-slit Observations of Luminous Obscured Quasars: Further Evidence for an Upper Limit on the Size of the Narrow-Line Region”, Kevin N. Hainline, **Ryan C. Hickox**, Jenny E. Greene, Adam Myers, Nadia Zakamska, Guilin Liu, and Xin Liu, 2014, *The Astrophysical Journal*, 787, 65 (arXiv:1404.1921)
27. ★ “Star formation and substructure in galaxy clusters”, S. A. Cohen, **R. C. Hickox**, G. A. Wegner, M. Einasto, J. Vennik, 2014, *The Astrophysical Journal*, 783, 136 (arXiv:1401.6171)
28. “Tracing the evolution of active galactic nuclei host galaxies over the last 9 Gyrs of cosmic time”, A. D. Goulding, W. R. Forman, **R. C. Hickox**, C. Jones, S. S. Murray, A. Paggi, M. L. N. Ashby, A. L. Coil, M. C. Cooper, J.-S. Huang, R. Kraft, J. A. Newman and S. P. Willner, 2014, *The Astrophysical Journal*, 783, 40 (arXiv:1310.8298)
29. ★ “Black hole variability and the star formation-AGN connection: Do all star-forming galaxies host an AGN?”, **R. C. Hickox**, J. R. Mullaney, D. M. Alexander, C.-T. J. Chen, K. N. Hainline, F. M. Civano, A. D. Goulding, 2014, *The Astrophysical Journal*, 782, 9 (arXiv:1306.3218)
30. “A direct measurement of the linear bias of mid-infrared-selected quasars at  $z \sim 1$  using cosmic microwave background lensing”, Geach, J. E., **Hickox, R. C. et al.**, 2013, *The Astrophysical Journal Letters*, 776, 41 (arXiv:1307.1706)
31. ★ “SALT Long-slit Spectroscopy of Luminous Obscured Quasars: An Upper Limit on the Size of the Narrow-Line Region”, Hainline, K. N., **Hickox, R. C.**, Greene, J., Zakamska, N., Myers, A. D., 2013, *The Astrophysical Journal*, 774, 145 (arXiv:1307.5852)
32. ★ “A correlation between star formation rate and average black hole accretion in star-forming galaxies”, Chien-Ting J. Chen, **Ryan C. Hickox**, Mark Brodwin, Christine Jones, Stephen S. Murray, Stacey Alberts, David M. Alexander, Roberto J. Assef, Michael J. I. Brown, Arjun Dey, William R. Forman, Varoujan Gorjian, Andrew D. Goulding, Emeric Le Floch, Buell T. Jannuzi, James R. Mullaney, & Alexandra Pope, 2013, *The Astrophysical Journal*, 773, 3 (arXiv:1306.1227)
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109. “GOODS–*Herschel*: radio-excess signature of hidden AGN activity in distant star-forming galaxies’, A. Del Moro, D. M. Alexander, J.R. Mullaney, E. Daddi, M. Pannella, F.E. Bauer, A. Pope, M. Dickinson, D. Elbaz, P.D. Barthel, M.A. Garrett, W.N. Brandt1, V. Charmandaris, R.R. Chary, K. Dasyra, R. Gilli, **R.C. Hickox**, R.J. Ivison, S. Juneau, E. Le Floc’h, B. Luo, G.E. Morrison, E. Rovilos, M.T. Sargent, and Y.Q. Xue, 2012, *Astronomy & Astrophysics* 459, 59 (arXiv:1210.2521)
110. “The galaxy optical luminosity function from the AGN and Galaxy Evolution Survey (AGES)”, Cool, R., Eisenstein, D. J., Brown, M. J. I., Caldwell, N., Dey, A., **Hickox, R. C.**, Jannuzi, B. T., Moustakas, J. 2012, *The Astrophysical Journal*, 748, 10 (arXiv:1201.2954)

111. “A candidate dual active galactic nucleus  $z = 1.175$ ”, Barrows, R. S., Stern, D., Madsen, K., Harrison, F., Assef, R. J., Cushing, M. C., Fassnacht, C., Gonzalez, A., Griffith, R., **Hickox, R. C.**, Kirkpatrick, J. D., Lagattuta, D. 2012, *The Astrophysical Journal*, 744, 7 (arXiv:1109.3469)
112. “Constraining halo occupation properties of X-ray AGNs using clustering of *Chandra* sources in the Boötes survey region”, Starikova, S., Cool, R., Eisenstein, D., Forman, W. R., Jones, C., **Hickox, R. C.**, Kenter, A., Kochanek, C. S., Kravtsov, A., Murray, S. S., Vikhlinin, A. 2011, *The Astrophysical Journal*, 741, 15 (arXiv:1010.1577)
113. “The mid-IR and X-ray selected QSO luminosity function”, Assef, R. J., Kochanek, C. S., Ashby, M. L. N., Brodwin, M., Brown, M. J. I., Cool, R., Forman, W., Gonzalez, A. H., **Hickox, R. C.**, Jannuzi, B. T., Jones, C., Le Floch, E., Moustakas, J., Murray, S. S., Stern, D., 2011, *The Astrophysical Journal*, 728, 56 (arXiv:1001.4529)
114. “Low resolution spectral templates for AGNs and galaxies from 0.03–30  $\mu\text{m}$ ”, Assef, R. J., Kochanek, C. S., Brodwin, M., Cool, R., Forman, W. R., Gonzalez, A. H., **Hickox, R. C.**, Jones, C., Le Floch, E., Moustakas, J., Murray, S. S., & Stern, D., 2010, *The Astrophysical Journal*, 713, 970–985 (arXiv:0909.3849)
115. “The star formation and nuclear accretion histories of normal galaxies in the AGES survey”, Watson, C. R., Kochanek, C. S., Forman, W. R., **Hickox, R. C.**, Jones, C. J., Brown, M. J.I., Brand, K., Dey, A., Jannuzi, B. T., Kenter, A. T., Murray, S. S., Vikhlinin, A., Eisenstein, D. J., Fazio, G. G., Green, P. J., McNamara, B. R., Rieke, M., Shields, J., *The Astrophysical Journal*, 696, 2206–2219 (arXiv:0903.2219)



## REVIEW ARTICLES WHITE PAPERS, AND POPULAR WORKS

1. “Obscured Active Galactic Nuclei”, **Ryan C. Hickox** and David M. Alexander, *Annual Reviews of Astronomy and Astrophysics* submitted (to appear in 2018)
2. “Active Galactic Nuclei: what’s in a name?” Paolo Padovani, David Alexander, Roberto Assef, Barbara De Marco, Paolo Giommi, **Ryan Hickox**, Gordon Richards Vernesa Smolcic, Evanthia Hatziminaoglou, Vincenzo Mainieri, Mara Salvato, 2017, *The Astronomy and Astrophysics Review* in press (arXiv:1707.07134)
3. “What is Astronomy?”, **Ryan C. Hickox**, Chapter 4 of *What Are the Arts and Sciences?*, D. Rockmore, Ed., University Press of New England, 2017
4. “Host galaxies and large-scale structures of active galactic nuclei”, **Ryan C. Hickox**, Stephanie M. LaMassa, John D. Silverman, Alexander Kolodzig, *Astronomy in Focus*, as presented at the IAU XXIX General Assembly, 2015. Proceedings of the IAU, Volume 29B, 2016, pp. 113–123 (arXiv:1612.04827)
5. “What Drives the Growth of Black Holes?”, Alexander, D. M. & **Hickox, R. C.**, 2012, *New Astronomy Reviews*, 46, 93 (arXiv:1112.1949)
6. “Supermassive Black Holes and the Growth of Galaxies”, **Hickox, R. C.**, two-part review for amateur astronomy journal *The Astronomer*, March–April 2011
7. “Black holes through cosmic time: Exploring the distant X-ray Universe with extragalactic *Chandra* surveys”, **Hickox, R. C.**, *Chandra* Newsletter cover article, Winter 2009 (arXiv:0904:3543)
8. “The growth and evolution of super massive black holes”, Murray, S. S. *et al.* 2010, Astro2010 Decadal Survey White Paper (arXiv:0903.5272)

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## SUMMARY OF KEY FIRST-AUTHOR PUBLICATIONS

- Hickox et al. (2014) “*Black hole variability and the star formation-AGN connection: Do all star-forming galaxies host an AGN?*” – Explored the connection between star formation and black hole growth in galaxies. Demonstrated that assuming short-timecale AGN variability, observations are consistent with *all* star-forming galaxies hosting growing black holes with accretion rates that closely follow the star formation rate, indicating long-term black hole-galaxy co-evolution. [142+ citations as determined by the NASA Astrophysics Data System]
- Hickox et al. (2012) “*The LABOCA Survey of the Extended Chandra Deep Field South: Clustering of submillimetre galaxies*” – Performed the most precise measurement to date of the spatial clustering of submillimeter galaxies (SMGs). Demonstrated that SMGs at  $z \sim 2$  have clustering consistent with quasars, and that their descendants will be massive ( $\sim 2\text{--}3L^*$ ) ellipticals. [109+ citations]
- Hickox et al. (2009) “*Host galaxies, clustering, Eddington ratios, and evolution of radio, X-ray, and infrared-selected AGNs*” – Measured host galaxy properties and dark matter halo masses for different classes of AGN at  $z \sim 0.5$  from the Boötes survey. Showed that AGNs selected in different wavebands represent separate populations with different Eddington rate distributions, residing in different host galaxies and large-scale environments. [265+ citations]

- Hickox & Markevitch (2006) “*Absolute measurement of the unresolved cosmic X-ray background in the 0.5–8 keV band with Chandra*” – Presented the absolute measurement of the unresolved cosmic X-ray background in the *Chandra* Deep Fields, representing the lowest surface-brightness cosmic X-ray signal ever measured. The results have been used for a variety of applications including constraints on the high redshift growth of supermassive black holes and measurements of the warm-hot intergalactic medium. [214+ citations]

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## PRESENTATIONS

Presentations include 58 invited talks and colloquia, 36 contributed talks at conferences and workshops, 18 seminars and lunch talks, and 33 conference posters.

### Invited talks and colloquia

1. “The Hidden Monsters: New Windows on the Cosmic Evolution of Supermassive Black Holes”, Physics & Astronomy Colloquium, University of St. Andrews, UK, 8 December 2017
2. “The Hidden Monsters: New Windows on the Cosmic Evolution of Supermassive Black Holes”, Physics & Astronomy Colloquium, Dartmouth College, 10 March 2017
3. “The Hidden Monsters: New Windows on the Cosmic Evolution of Supermassive Black Holes”, Astronomy Colloquium, Pennsylvania State University, 1 March 2017
4. “Active Galactic Nuclei and Large-Scale Structures”, NASA *Lynx* Mission Concept Study Seminar Series (on the Web), 18 January 2017
5. “The Hidden Monsters: New Windows on the Cosmic Evolution of Supermassive Black Holes”, Astrophysics Seminar, McGill University, Montreal, QC, 17 January 2017
6. “The Hidden Monsters: New Windows on the Cosmic Evolution of Supermassive Black Holes”, Astronomy Colloquium, Yale University, New Haven, CT, 8 December 2016
7. “The X-ray Surveyor Mission Concept”, *NuSTAR* Science Meeting, Pasadena, CA, 15–17 November 2016
8. “The Synthesis of the Cosmic X-ray Background with *NuSTAR*”, *NuSTAR* Science Meeting, Pasadena, CA, 15–17 November 2016
9. “Hidden Monsters: The Cosmic Evolution of Supermassive Black Holes”, Astrophysics Colloquium, Kavli Institute for Astrophysics and Space Research, MIT, Cambridge, MA, 8 November 2016
10. “Black holes in the cosmic web: The big picture of AGN and large-scale structure”, Hot Spots in the XMM Sky: Cosmology from X-ray to Radio, Mykonos, Greece, 15–18 June 2016
11. “The Hidden Monsters: Obscured AGN in the Era of *NuSTAR* and *WISE*”, Joint Princeton/Institute for Advanced Study Astrophysics Colloquium, Princeton, NJ, 22 March 2016
12. “The Hidden Monsters: Obscured AGN in the Era of *NuSTAR* and *WISE*”, Berkeley Center for Cosmological Physics Seminar, Berkeley, CA, 8 March 2016
13. “Supermassive Black Holes and the Growth of Galaxies”, Quinsigamond Community College, Worcester, MA, 10 February 2016
14. “Uncovering the Black Hole–Galaxy Connection”, Physics Colloquium, University of Vermont, 20 January 2016

15. “The Hidden Monsters: Obscured AGN in the Era of *Chandra*, *NuSTAR*, and *WISE*”, Steve Murray Lecture, High Energy Astrophysics Seminar, Harvard-Smithsonian Center for Astrophysics, 9 December 2015
16. “A new framework for understanding the AGN-star formation connection”, SEAL Talk, NASA Goodard Space Flight Center, 3 December 2015
17. “Uncovering the hidden growth of supermassive black holes”, Astrophysics Colloquium, Boston University, 30 November 2015
18. “Large-Scale Clustering and Host Galaxies of AGN”, Invited talk, Focus Meeting 6: "X-ray surveys of the hot and energetic cosmos", XXIX IAU General Assembly, Honolulu, HI, 5–6 August 2015
19. “The SF-AGN connection: Do all star-forming galaxies host an AGN?”, Colloquium, Space Telescope Science Institute, Baltimore, MD, 4 December 2014
20. “The monsters within: The cosmic evolution of black holes, galaxies, and dark matter halos”, Astronomy & Physics Colloquium, St. Mary’s University, Halifax, CA, 10 October 2014
21. “The monsters within: The cosmic evolution of black holes, galaxies, and dark matter halos”, Physics & Astronomy Colloquium, Tufts University, 3 October 2014
22. “The SF-AGN connection: Does AGN activity follow or prevent star formation?”, Review talk, AGN vs. Star Formation: The Fate of the Gas in Galaxies, Durham, UK, 28 July–3 August 2014
23. Workshop Summary, Clustering Measurements of Active Galactic Nuclei, ESO, Garching, Germany, 14–18 July 2014
24. “The Zoo of AGN and a coherent picture of AGN clustering”, Clustering Measurements of Active Galactic Nuclei, ESO, Garching, Germany, 14–18 July 2014
25. “The Hidden Monsters: Obscured quasars in the era of *WISE* and *NuSTAR*”, High Energy Seminar, MPA, Garching, Germany, 20 December 2013
26. “Black holes and galaxy evolution: Does AGN activity follow or prevent star formation?”, Joint Astronomy Colloquium, ESO/MPA/MPE/TUM, Garching, Germany, 19 December 2013
27. “AGN feedback and the connection to triggering”, Review talk, The Triggering Mechanisms for Active Galactic Nuclei, Lorentz Center, Leiden, Netherlands, 22–26 July 2013
28. “The beauty of simplicity: Understanding galaxy and black hole evolution”, HEAD lunch talk, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, 16 July 2013
29. “The beauty of simplicity: Some insights on galaxy and black hole formation”, Physics & Astronomy Colloquium, Dartmouth College, 8 March 2013
30. “The dark and the light: Black holes, dark halos, and their influence on galaxy evolution”, Astronomy Seminar, Rutgers University, 7 March 2013
31. “The dark and the light: Black holes, dark halos, and their influence on galaxy evolution”, Cosmology Seminar, University of California, Berkeley, 12 February 2013
32. “The dark and the light: Black holes, dark halos, and their influence on galaxy evolution”, Cosmology Seminar, Stanford University, Palo Alto, CA, 11 February 2013
33. “The dark and the light: Black holes, dark matter halos, and their influence on galaxy evolution”, CRA Seminar, Center for Relativistic Astrophysics, Georgia Institute of Technology, 24 January 2013

34. “The dark and the light: Black holes, dark matter halos, and their influence on galaxy evolution”, Astronomy Colloquium, University of Florida, 23 January 2013
35. “Black Holes in the Cosmic Web: Clustering and Host Galaxies of AGN”, Illuminating the AGN/Galaxy Connection, Ringberg Castle, Germany, 3–5 December 2012
36. “What Drives the Growth of Black Holes?”, Astronomy Colloquium, University of Massachusetts, Amherst, MA, 29 November 2012
37. “Is star formation in galaxies influenced by the presence of an AGN?”, Discussion Leader, Black Hole Feedback 2012, Dartmouth College, Hanover, NH, 30 July-3 August 2012
38. “AGN evolution and the growth of supermassive black holes”, Review talk, Black Hole Universe 2012, Bamberg, Germany, 18–22 June 2012
39. “What drives the growth of black holes?”, Physics & Astronomy Colloquium, University of Wyoming, 23 March 2012
40. Conference summary on “Extreme Activity: Starbursts and Active Galactic Nuclei”, Galaxy Formation, Durham, UK, 18–22 July 2011
41. “What drives the growth of black holes?”, Astronomy Seminar, University of Sussex, 17 June 2011
42. “What drives the growth of black holes?”, Astronomy Seminar, University of Nottingham, 8 June 2011
43. “What drives the growth of black holes?”, Invited talk, 218th Meeting of the American Astronomical Society, Boston, MA 25 May 2011
44. “The dark and the light: Black holes, dark matter halos, and their influence on galaxy evolution”, INAF/Osservatorio di Bologna, Bologna, Italy, 12 May 2011
45. Leader of extended discussion on “Multi-wavelength AGN activity and tracers”, 2011 Aspen Meeting on Galaxy Evolution, Aspen, CO, 20 March 2011
46. “The dark and the light: Black holes, dark matter halos, and their influence on galaxy evolution”, Physics Colloquium, Dartmouth College, 21 February 2011
47. “The dark and the light: Black holes, dark halos, and their influence on galaxy evolution”, Astrophysics Seminar, University of Bristol, 17 February 2011
48. “Black holes in the cosmic web: host galaxies and large-scale environments of AGN”, Astrophysics Seminar, University of Sheffield, 16 February 2011
49. “The dark and the light: Black holes, dark halos, and their influence on galaxy evolution”, Steward-NOAO Joint Colloquium, Tucson, AZ, 18 January 2011
50. “The dark and the light: Black holes, dark halos, and their influence on galaxy evolution”, Astrophysics Seminar, UCL Mullard Space Science Laboratory, 28 October 2010
51. “Host galaxies and large-scale environments of AGN”, Astrophysics Seminar, University of Southampton, 27 October 2010
52. “Black holes in the cosmic web”, Invited review, AGN Populations, Parameters, and Power workshop, Birmingham, UK, 27 September 2010
53. “Black holes in the cosmic web: host galaxies and large-scale environments of AGN”, Exploratory workshop on Cosmogony of AGN: Unifying Approaches for the Next Decade, Brindisi, Italy, 3 September 2010

54. “The big picture of AGN feedback”, Astrophysics Seminar, University of Birmingham, 12 May 2010
55. “The big picture of AGN feedback: black hole accretion and galaxy evolution in multiwavelength surveys”, Astrophysics Seminar, University of Leicester, 28 October 2009
56. “Black holes through cosmic time: Exploring the distant X-ray Universe with extragalactic *Chandra* surveys”, Invited review, NERQUAM 2009, Brandeis University, 20 May 2009
57. “Massive Halos and Violent Mergers – Supermassive Black Hole and Galaxy Evolution in the Wide-field Boötes Survey”, Colloquium, South African Astronomical Observatory, Cape Town, 12 March 2009
58. “Evolution and environments of active galactic nuclei”, Astronomy Colloquium, Wesleyan University, Middletown, CT, 1 October 2008

### Contributed talks and seminars

1. “The Hidden Monsters: New Windows on the Cosmic Evolution of Supermassive Black Holes”, Astronomy Seminar, Durham University, UK, 6 December 2017
2. “Resolving the hidden connections between black holes, galaxies, and halos with *Chandra* and *Lynx*”, From *Chandra* to *Lynx*: Taking the Sharpest X-ray Vision Fainter and Farther, Harvard University, 8–10 August 2017
3. “Uncovering the Full Population of Elusive Growing Black Holes with X-ray and Multiwavelength Surveys”, Elusive AGN in the Next Era, George Mason University, Fairfax, VA, 12–15 June 2017
4. “Obscured AGN and the cosmic X-ray background in the era of *NuSTAR*”, Hidden Monsters: Obscured AGN in the Era of *NuSTAR* and *WISE*, Dartmouth College, 8–12 August 2016
5. “AGN synthesis of the cosmic X-ray background with *NuSTAR*”, NERQUAM 2016, Brandeis University, 9 June 2016
6. “Resolving the cosmic X-ray background with *NuSTAR* and *Chandra*”, AAS High Energy Astrophysics Division Meeting, Naples, FL, 4–7 April 2016
7. “The cosmic evolution of galaxies and black holes in the era of precision cosmology”, American Physical Society New England Regional Meeting, Hanover, NH, 6–7 November 2015
8. “The *NuSTAR* survey of the COSMOS field” (in collaboration with F. Civano), AAS 225th Annual Meeting, Seattle, WA, 5–8 January 2015
9. “Spectral energy distributions and photometric redshifts for WISE-selected obscured quasars”, AAS 225th Annual Meeting, Seattle, WA, 5–8 January 2015
10. “Resolving the cosmic X-ray background with *Chandra* and *NuSTAR*”, 15 Years of Science with *Chandra*, Boston, MA, 18-21 November 2014
11. “Black hole variability and the star formation-AGN connection: Do all star-forming galaxies host an AGN?”, AAS HEAD Meeting, Chicago, IL, 18–21 August 2014
12. “The Star Formation-AGN Connection: Do All Star-forming Galaxies Host an AGN?”, NERQUAM 2014, Cambridge, MA, 23 May 2014
13. “*NuSTAR* extragalactic survey simulations”, *NuSTAR* Extragalactic Survey Team Meeting, Durham, UK, 8 April 2014
14. “A first look at the distant high-energy X-ray population with *NuSTAR*”, Presentation to High Energy Group, MPE, Garching, Germany, 17 December 2013

15. “On the cosmic evolution of galaxies and black holes: The simplest possible picture”, Astrophysics Seminar, Durham University, 4 September 2013
16. “Black hole variability and the star formation-AGN connection: Do all star-forming galaxies host an AGN?”, Quasar Tea, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, 3 May 2013
17. “The beauty of simplicity: Understanding galaxy and black hole evolution”, Astronomy Wednesday Lunch Talk, Princeton University, 6 March 2013
18. “Colors and Composite SEDs of Type 1 and Type 2 Quasars with SDSS, WISE, and GALEX”, AAS Annual Meeting, Long Beach, CA, 6–10 January 2013
19. “AGN variability and the links between star formation and BH growth”, Black Hole Feedback 2012, Dartmouth College, Hanover, NH, 30 July-3 August 2012
20. “Clustering, Halo Mass, and Evolution of Submillimeter Galaxies”, AAS Annual Meeting, Austin, TX, 8–12 January 2012
21. “Black holes and starbursts in the cosmic web”, UK National Astronomy Meeting, Llandudno, Wales, 18 April 2011
22. “Black holes and starbursts in the cosmic web: Clustering and evolution of quasars and submillimeter galaxies”, AAS Annual Meeting, Seattle, 10 January 2011
23. “Black hole accretion modes, host galaxies, and dark matter halos”, Witnesses of Cosmic History: Formation and evolution of black holes, galaxies and their environment, Potsdam, Germany, 21 September 2010
24. “Accreting black holes in the high-redshift Universe: forecasts for the future with the *Wide-Field X-ray Telescope*”, DEX workshop, Edinburgh, UK, 8 September 2010
25. “The edge of detection: The unresolved cosmic X-ray background in the Chandra Deep Fields”, New Results in X-ray Astronomy 2010, Durham, UK, 7 September 2010
26. “Clustering of obscured and unobscured quasars”, What Drives the Growth of Black Holes? international workshop, Durham, UK, 28 July 2010
27. “The *Wide-Field X-ray Telescope*”, The Infrared-X-Ray Connection in Galaxy Evolution, Mullard Space Science Laboratory, 15 July 2010
28. “AGN accretion modes, host galaxies, and environments”, The Infrared-X-Ray Connection in Galaxy Evolution, Mullard Space Science Laboratory, 13 July 2010
29. “The big picture of AGN feedback – black hole accretion and galaxy evolution in multiwavelength surveys”, The Monster’s Fiery Breath: Feedback in Galaxies, Groups, and Clusters, Madison, WI, 1 June 2009
30. “AGN clustering in the Boötes survey”, Boötes Survey Workshop, CCAPP, OSU, Columbus, OH, 28–29 April 2009
31. “Are most low-luminosity AGN really obscured?”, Quasar Tea, Harvard-Smithsonian Center for Astrophysics, 10 April 2009
32. “Massive Halos and Violent Mergers – Exploring Supermassive Black Hole and Galaxy Evolution in the Wide-field Boötes Survey”, IfA Seminar, Royal Observatory Edinburgh, Scotland, 1 April 2009
33. “Massive Halos and Violent Mergers – Exploring Supermassive Black Hole and Galaxy Evolution in the Wide-field Boötes Survey”, Astronomy Seminar, University of the Witwatersrand, Johannesburg, South Africa, 5 March 2009

34. “Accretion in the Universe: From neutron stars to supermassive black holes”, Astronomy Seminar, University of Johannesburg, South Africa, 3 March 2009
35. “Massive Halos and Violent Mergers – Exploring Supermassive Black Hole and Galaxy Evolution in the Wide-field Boötes Survey”, Astronomy Seminar, Durham University, UK, 29 January 2009
36. “Host galaxies, clustering, and evolution of AGN”, The Starburst–AGN Connection Conference, Shanghai, China, 31 October 2008
37. “Clustering and evolution of AGN and galaxies in the Boötes Field”, CCPP Seminar, New York University, 14 October 2008
38. “Clustering of obscured and unobscured quasars”, Postdoc Symposium, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, 7 October 2008
39. “Clustering and evolution of radio, X-ray, and IR-selected AGN”, YCAA Seminar, Yale University, New Haven, CT, 30 September 2008
40. “Clustering and evolution of radio, X-ray, and IR-selected AGN”, SDSS Symposium, Chicago, IL, 15 August 2008
41. “Host galaxies, clustering, and evolution of radio, X-ray, and IR AGN at  $z < 1$ ”, Radio Galaxies in the *Chandra* Era, Cambridge, MA, 10 July 2008
42. “Host galaxies, clustering, and evolution of radio, X-ray, and IR-selected AGN at  $z < 1$ ”, NERQUAM 2008, Cambridge, MA, 30 May 2008
43. “Obscuration and clustering of AGN in the 9 square degree Boötes survey”, Astronomy Tea Talk, Caltech, 24 March 2008
44. “Obscuration and clustering of AGN in the 9 square degree Boötes survey”, Lunch Talk, Carnegie Observatories, Pasadena, CA, 17 March 2008
45. “Obscured quasars and AGN accretion modes, host galaxies, clustering in the 9 square degree Boötes field”, Thursday Astrophysics Seminar, Columbia University, 7 February 2008
46. “Obscured quasars and AGN accretion modes, host galaxies, clustering in the 9 square degree Boötes field”, Astronomy Wednesday Lunch Talk, Princeton University, 6 February 2008
47. “Obscured quasars and the clustering of active galaxies”, Dissertation talk, AAS Annual Meeting, Austin, TX, 8–11 January 2008
48. “Mid-infrared selected obscured AGN in the Boötes field”, CCAPP Workshop: Active Galactic Nuclei in a Cosmological Context, OSU, Columbus, OH, 1–3 October 2007
49. “Resolving the unresolved cosmic X-ray background in the *Chandra* Deep Fields”, X-ray Surveys Meeting, Rhodes, Greece, 2–6 July 2007
50. “Resolving the unresolved cosmic X-ray background in the *Chandra* Deep Fields”, HEAD Lunch Talk, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, 9 February 2007
51. “A population of obscured, infrared-selected active galaxies in the Boötes field”, *Chandra* Extragalactic Surveys Workshop, Cambridge, MA, 6–8 November 2006
52. “Identifying a population of obscured, infrared-selected active galaxies in the Boötes field”, AAS HEAD Meeting, San Francisco, CA, 3–7 October 2006
53. “A rich bounty of AGN in the 9 square degree Boötes field: redshift evolution and large-scale structure”, Durham Cosmology Conference: Cosmic Frontiers, Durham, UK, 31 July–4 August 2006

54. “Thousands of AGN in the 9 square degree Bootes field: X-ray and infrared properties”, NERQUAM 2006, Cambridge, MA, 30 May 2006

### Conference posters

1. “NuSTAR Detection of Multiple Reflections in NGC 1068”, Bauer, F. E., Arevalo, P., Gandhi, P., et al., AAS 225th Annual Meeting, Seattle, WA, 5–8 January 2015, Poster #432.10
2. “The C4 Cluster Abundance Function Using Caustic Mass Estimates”, Gifford, D., Miller, C. J., Kern, N. S., Keimach, A., **Hickox, R. C.**, & Hainline, K. N., AAS 225th Annual Meeting, Seattle, WA, 5–8 January 2015, Poster #252.18
3. “Massive Compact Galaxies with High-velocity Outflows: Morphological Analysis and Constraints on AGN Activity”, Sell, P., Tremonti, C. A., **Hickox, R. C.**, et al., AAS 225th Annual Meeting, Seattle, WA, 5–8 January 2015, Poster #251.10
4. “Skype Me! Astronomers, Students, and Cutting-Edge Research”, **Hickox, Ryan C.** & Gauthier, Adrienne J., AAS Annual Meeting, Boston, MA, 1–5 June 2014
5. “Star formation and substructure in galaxy clusters”, S. A. Cohen, **R. C. Hickox**, G. A. Wegner, M. Einasto, J. Vennik, 2013, AAS Annual Meeting, Washington, DC, 5–9 January 2014
6. “A spectroscopic survey of WISE-selected obscured quasars with SALT”, **Hickox, Ryan C.**, Hainline, K., Myers, A. D., AAS Annual Meeting, Washington, DC, 5–9 January 2014
7. “An elusive X-ray iron absorption line in a candidate recoiling supermassive black hole”, Marchesi, Stefano, Civano, F. M., Lanzuisi, G., Francesca Civano, S. Marchesi, A. Comastri, E. Costantini, M. Elvis, V. Mainieri, **R. Hickox**, K. Jahnke, S. Komossa, E. Piconcelli, C. Vignali, M. Brusa, N. Cappelluti, and A. Fruscione, AAS Annual Meeting, Washington, DC, 5–9 January 2014
8. “The Halo Occupation Distribution of X-ray-Bright Active Galactic Nuclei: A Comparison with Luminous Quasars”, Chatterjee S., Richardson J., Zheng Z., Myers A. & **Hickox R.**, APS April Meeting, Denver, CO, 13–16 April 2013
9. “High-Velocity Outflows from Eddington-Limited Starbursts”, Diamond-Stanic, A. M., Moustakas, J., Tremonti, C. A., Coil, A. L., **Hickox, R. C.**, Sell, P., Robaina, A., Rudnick, G., Geach, J., Canalizo, G., AAS Annual Meeting, Long Beach, CA, 6–10 January 2013
10. “SALT Longslit Spectroscopy of Luminous Obscured Quasars”, Hainline, K., **Hickox, R. C.**, Greene, J. E., AAS Annual Meeting, Long Beach, CA, 6–10 January 2013
11. “Characterizing the Iron K $\alpha$  Line Equivalent Width”, Trouille, L., **Hickox, R. C.**, Alexander, D., AAS Annual Meeting, Long Beach, CA, 6–10 January 2013
12. “The NuSTAR Obscured AGN Observing Program”, Walton, D., Alexander, D., Assef, R., Balokovic, M., Bauer, F. E., Boggs, S. E., Boydston, K., Brandt, W. N., Christensen, F., Comastri, A., Craig, W., Farrah, D., Fiore, F., Hailey, C. J., Harrison, F., **Hickox, R. C.**, Luo, B., Madsen, K., Rigby, J. R., Risaliti, G., Stern, D., Teng, S. H., Veilleux, S., Zhang, W., AAS Annual Meeting, Long Beach, CA, 6–10 January 2013
13. “Extragalactic Surveys with NuSTAR”, Boydston, K., Ajello, M., Alexander, D., Assef, R. J., Ballantyne, D. R., Balokovic, M., Bauer, F. E., Boggs, S. E., Brandt, W. N., Christensen, F., Civano, F. M., Comastri, A., Craig, W., Del Moro, A., Elvis, M., Fiore, F., Hailey, C. J., Harrison, F., Helfand, D. J., **Hickox, R. C.**, LaMassa, S. M., Lansbury, G., Luo, B., Madsen, K., Markwardt, C., Mullaney, J., Puccetti, S., Saez, C., Stern, D., Tagliaferri, G., Treister, E., Urry, C. M., Walton, D., Zhang, W., NuSTAR Science Team, AAS Annual Meeting, Long Beach, CA, 6–10 January 2013



14. “Deep Silicate Features in Compton-thick AGN Arise due to Dust in the Host Galaxy”, Goulding, A. D., Alexander, D. M., Bauer, F., Forman, W. R., **Hickox, R. C.**, Jones, C., Mullaney, J., Trichas, M., AAS Annual Meeting, Long Beach, CA, 6–10 January 2013
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