# CURRICULUM VITAE

Christopher Peter O'Dea
School of Physics and Astronomy
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D.O.B: 5/21/1957

## Education

| | | |
|---|---|---|
| 1978 | Massachusetts Institute of Technology | B.S. in Physics |
| 1984 | University of Massachusetts | Ph.D. in Astronomy |

## PhD Dissertation

Morphology and Energetics of Narrow Angle Tail Radio Sources

## Research

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|---|---|
| Interests | quasars and active galaxies; clusters of galaxies;<br>the intracluster medium; |
| Techniques | radio single dish and interferometric imaging and spectroscopy<br>ground based optical imaging and spectroscopy<br>space based ultraviolet (HST)<br>X-ray (ROSAT, ASCA, XMM, & CHANDRA)<br>Infrared (Spitzer, Herschel)<br>imaging and spectroscopy |

This research has been supported by over $1.6 million in grant funding and resulted in over 170 refereed publications.

## Professional Timeline

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|---|---|
| 9/2011 - 7/2012 | Visiting Scientist (Sabbatical)<br>Harvard-Smithsonian Center for Astrophysics |
| 2009– | Professor Physics Dept. (with Tenure)<br>Rochester Institute of Technology, Rochester, NY |
| 2008– | Graduate Program Faculty<br>Astrophysical Sciences and Technology (AST) PhD<br>Rochester Institute of Technology, Rochester, NY |
| 2004–2009 | Associate Professor Physics Dept. (with Tenure)<br>Rochester Institute of Technology, Rochester, NY |
| 1/1999 - 9/1999 | Visiting Fellow (Sabbatical)<br>Princeton University |
| 1997–2004 | Associate Astronomer (with Tenure) |

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|---|---|
| | Space Telescope Science Institute, Baltimore, MD |
| 1995–1997 | Associate Astronomer<br>Space Telescope Science Institute, Baltimore, MD |
| 1990–1995 | Assistant Astronomer<br>Space Telescope Science Institute, Baltimore, MD |
| 1987–1990 | Postdoctoral Research Associate<br>Netherlands Foundation for Research in Astronomy, Dwingeloo, NL |
| 1984–1987 | Postdoctoral Research Associate<br>National Radio Astronomy Observatory, Charlottesville, VA. |

**Courses Taught**

1017-311 University Physics I (Mechanics)
1017-369 University Physics IA (Mechanics)
1017-313 University Physics III (E&M)
1055-359 Frontiers of Science (Guest Lecturer)
1060-730 Radiative Processes in Astrophysics (Graduate Course)

**RIT Undergraduate Research Students Supervised**

| | |
|---|---|
| George Privon | 2004–06 Spitzer Observations of 3CR Radio Galaxies |
| Candida Allen | 2005–06 Design Considerations for a Dedicated Telescope Array to Study Astrophysical Masers |
| Ryan Miller | 2006–07 A Low Frequency Radio Telescope at RIT |
| Bryan Rague | 2006–10 Spitzer Observations of Brightest Cluster Galaxies |
| Jacob Kearns | 2006 Optical Spectroscopy of Seyfert Galaxies |
| Shawn Staudaher | 2006-08 Spitzer Observations of 3CR Radio Galaxies |
| Russell Barkley | 2007–08 VLA Observations of Low Luminosity Radio Galaxies |
| Ting Lik | 2007–08 GALEX Ultraviolet Observations of Brightest Cluster Galaxies |
| Melissa Trempanier | 2007–08 Spitzer Observations of Low Luminosity Radio Galaxies |
| Timothy Quinn | 2007-08 A Low Frequency Radio Telescope at RIT |
| Gregory Hrinda | 2008 GALEX Observations of 3CR Radio Galaxies |
| Brad Snios | 2008–09 Capstone Project: Ultraviolet Observations of Star Formation in Brightest Cluster Galaxies |
| Karla Hatfield | 2008–09 Spitzer Observations of Radio Galaxies |
| Zachary Lawrence | 2008–09 Radio Observations of Low Luminosity Radio Galaxies |
| Ramakant Sharma | 2008–10 Radio Observations of Powerful Radio Galaxies |
| Jeffery Smith | 2008–09 A Search For Double-Double Radio Galaxies |
| Jeffery Smith | 2009–10 An Algorithm for Finding Features in Spectral Line Data Cubes |
| Megan Dorn | 2009–10 Spitzer Observations of Radio Galaxies |
| Kevin Christiansen | 2009– X-ray Observations of Radio Galaxies |
| Mark McCoy | 2009–10 The Spectral Energy Distribution of Radio Galaxies |
| Chris Mularkey | 2009–10 Radio Observations of Compact Steep Spectrum Radio Galaxies |
| Mike Every | 2010– Star Formation in Powerful Radio Galaxies |
| Marc Magagnoli | 2011 Infrared Spectral Energy Distributions of Low Luminosity Radio Galaxies |
| Alex Jermyn | 2012– Infrared Spectral Energy Distributions of Low Luminosity Radio Galaxies |
| Brandon Doyle | 2013– Hubble Images of high Redshift 3CR Radio Galaxies |

**Graduate Students Advised or Co-advised**

Carlo Stanghellini (Univ. of Bologna) 1990-92
Thesis: Radio and Optical Imaging of GPS Radio Sources: Global Properties

Willem De Vries (Univ. of Groningen) 1995-99
Thesis: Host Galaxies of Powerful Extragalactic Radio Sources

David Russell (Univ. of Manchester) 2000-03
Thesis: HST and Radio Observations of Optical Jets

Alvaro Labiano (Univ. of Groningen) 2002-06
Thesis: Interaction of Compact Radio Galaxies with their Ambient Medium

Avanti Tilak (Johns Hopkins University) 2003-06
Thesis: Constraints on Jets and Accretion Disks in Low Luminosity Radio Galaxies

George Privon (Rochester Institute of Technology) 2005-06
Masters Thesis: Spitzer Observations of Cygnus A

Grant Tremblay (Rochester Institute of Technology) 2008-11
Thesis: AGN Feedback in the Cool Core Cluster Abell 2597

Sravani Vaddi (Rochester Institute of Technology) 2010–

David Saroff (Rochester Institute of Technology) 2010–
Kevin Cooke (Rochester Institute of Technology) 2013–

**Post-Docs Supervised or Co-supervised**

Anton Koekemoer 1997-98
Marek Kukula 1997-99
Catherine Buchannan 2004-06
Preeti Kharb 2005-07
Jacob Noel-Storr 2006-08
Rupal Mittal 2009-

**Service at RIT**

| | |
|---|---|
| 2012- | RIT Faculty Leave for Development Committee |
| 2012- | College of Science Tenure Committee |
| 2012- | AST PhD program Curriculum Committee |
| 2009-10 | Physics Dept. Capstone Committee |
| 2007-11 | Chair, RIT AST Graduate Student Recruiting and Admissions Committee |
| 2006-10 | Organizer, RIT Astronomy Colloquium Series |
| 2005- | Advised RIT Physics Majors |

**Previous Service at Space Telescope Science Institute (STScI)**

| | |
|---|---|
| 2003-04 | Johns Hopkins University Graduate Student Admissions Committee |
| 2003-04 | STScI Financial Review Committee |
| 2002-04 | STScI Science Personnel Committee |
| 2002-04 | Deputy, Task Force 2, Science Culture of STScI |
| 2001-02 | Secretary, STScI Senior Science Staff |
| 1999-00 | STScI Science Recruitment Committee |
| 1998-99 | Chair, STScI Science Recruitment Committee |
| 1997-98 | STScI Science Personnel Committee |
| 1994-96 | Chair, STScI AGN Journal Club |

**Service to the Astronomy Community**

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|---|---|
| 2013 | Spitzer Cycle 10 Time Allocation Committee |
| 2013 | Chandra AO15 Time Allocation Committee, Pundit |
| 2012 | NASA Astrophysics Theory Review, Chair of Active Galactic Nuclei Panel |
| 2012 | Chandra AO14 Time Allocation Committee |
| 2012 | HST Cycle 20 Time Allocation Committee |
| 2010 | Chandra AO12 Time Allocation Committee |
| 2008– | New York Astronomical Corporation, Chairman of the Board |
| 2008– | NASA/NY Space Grant Consortium, Site Director |
| 2008 | NSF Panel for Review of University Radio Observatories |
| 2008 | Spitzer Cycle 5 Time Allocation Committee |
| 2007 | Chandra AO9 Time Allocation Committee |
| 2006– | Astronomical Society of New York, Board Member |
| 2006 | HST Cycle 15 Extragalactic Proposal Review Panel |
| 2005–06 | New York Astronomical Corporation, hair - Investment Committee |
| 2005– | New York Astronomical Corporation, Institutional Representative |
| 2003 | Committee on the Future of VLBI in the US |
| 2003 | Chair, NASA ADP/LTSA Review Panel on Large Scale Structure |
| 2003 | RXTE AO8 Time Allocation Committee |
| 2000 | RXTE AO6 Time Allocation Committee |
| 1996–00 | NRAO Users Committee |
| 1996 | ASCA AO5 USA Time Allocation Committee |
| 1997–98 | VLA and VLBA proposal referee |
| 1995 – | MIT Educational Council |
| 1992–93 | VLA and VLBA proposal referee |
| 1988–90 | Westerbork Synthesis Radio Telescope Time Allocation Committee |

**Management and Technical Responsibilities at Space Telescope Science Institute**

| | |
|---|---|
| 2002-04 | Chair, Phase I to Grant Management System working group |
| 2002-04 | Project Scientist, Astronomer Proposal Tool (APT) Visit Planner |
| 2002-04 | Science Programs Scientist |
| 2001-04 | Project Scientist, APT Exposure Time Calculators |
| 2000-02 | Hubble Advance Camera for Surveys (ACS) Instrument Scientist |
| 1996-99 | Hubble Wide Field Planetary Camera 2 (WFPC2) Instrument Scientist |
| 1995-96 | Chair, User Support Coordinating Committee |
| 1994-95 | Lead, Observer Liaison Scientists |
| 91,94,97 | HST Time Allocation Committee (TAC) Panel Coordinator |
| 1990-93 | Proposal Scientist, User Support Branch |

**Professional Societies**

American Astronomical Society
European Astronomical Society
International Astronomical Union (Divisions B, J)
Sigma XI, The Scientific Research Society

**Awards**

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|---|---|
| 2014 | RIT College of Science - Outstanding Scholar Award |
| 2003 | NASA/GSFC Group Award - Advanced Camera for Surveys Flight Team |

**Refereeing (Journals)**

Astronomical Journal
Astronomical Review
Astrophysical Journal
Astronomy & Astrophysics
Monthly Notices of the Royal Astronomical Society
Nature
New Journal of Physics
Publications of the Astronomical Society of Japan
Publications of the Astronomical Society of the Pacific

**Refereeing (Funding)**

European Research Council
Israel Science Foundation
Italian Ministry for Universities and Research
National Air and Space Administration (NASA)
National Science Foundation (NSF)
Research Corporation

**Grant Funding (Total $1,762,301)**

1992 ROSAT A03, "PSPC Images of GPS Radio Galaxies", $25,000

1993 HST AR/DD Proposal 4933, "The Mini-alignment Effect in Seyferts," $50,000

1995 HST Cycle 5 Proposal 5934, "A Search for UV Absorption Lines in the Intracluster Medium of Abell 1030," $16,261

1996 ASCA Proposal, "Probing the Nuclei of GHz Peaked Spectrum Galaxies," $20,196

1996 HST Cycle 6 Proposal 6717, "UV Spectroscopy of the Luminous Cooling Flow Nebula in A2597 $47,097

1996 HST Cycle 6 Proposal 6776, "A Comparative HST Imaging Study of Radio Galaxies and the Hosts of Radio-Loud and Radio-Quiet Quasars," $96,561 (Admin PI)

1997 HST Cycle 7 Proposal 7447, "The Cosmological Evolution of Quasar Host Galaxies" $99,470 (Admin PI)

1997 HST Cycle 7.5 Proposal 7855, "The Evolution of Powerful Radio Galaxies" $90,329

1998 HST AR 7975, "A Systematic Study of Quasar Host Galaxies" $96,983

1999 HST Cycle 8 Proposal 8104, "Constraints on the Evolution of Powerful Radio Galaxies" $53,773

1999 HST Cycle 8 Proposal 8107, "What is the Nature of the Cold Medium in Cooling Flow Clusters? $47,624

2001 HST Cycle 10 Proposal 9085, "Measuring the Masses of High-Z Quasar Host Galaxies" $89,286 (Admin PI)

2002 CHANDRA AO4, "CHANDRA Imaging of a Complete Sample of Low

Luminosity Radio Galaxies: Jets vs. Disks in the Black Hole Paradigm"
$35,195

2002 HST Cycle 11 Proposal 9085, "Life Cycles of Radio Galaxies" $32,557

2003 HST Cycle 12 Proposal 9897, "Time Scales for Gas Transport, Star Formation, and AGN Fueling in the Born-again Radio Galaxy 3C236" $53,276

2003 XMM AO2, "Probing the Hosts, Environments, and Physics of Young Radio Galaxies" $35,195

2004 HST Cycle 13 10117, "The Co-Evolution of Star Formation and Powerful Radio Activity in Galaxies" $51,744

2004 Spitzer/JPL Cycle 1, "Infrared SEDs of Seyfert Galaxies: Starbursts and the Nature of the Obscuring Medium" $98,500

2006 Spitzer/JPL Cycle 3, "A Census of Star Formation in Brightest Cluster Galaxies" $86,055

2007 HST Cycle 16, Program 11230 , "HST FUV Observations of Brightest Cluster Galaxies: The Role of Star Formation in Cooling Flows and BCG Evolution" $36,053

2007 Chandra Cycle 9, "Interaction of AGN Outbursts with their Environments," $11,598

2007 Chandra Cycle 9, "Towards a Complete Sample: 3CR Extragalactic Radio Sources with $z < 0.3$" $35,000

2008 NASA Space Grant, "Emission Line Imaging of Powerful Radio Galaxies, $10,000

2008 NASA Herschel Key Project, "Constraining the Cold Gas and Dust in Cooling Flows," $262,000

2008 NASA XMM, "X-rays from Hot Shocked Gas: Probing Radio Galaxy Propagation," $51,100

2009 NASA Spitzer, "Evolution of Compact Quasars and Radio Galaxies," $17,450

2009 NASA Spitzer, "IRS Spectroscopic Follow-up of Spitzer Brightest Cluster Galaxies," $15,000

2009 NASA Chandra, "Completing the Cycle of Cooling, Star Formation, and AGN Heating in Brightest Cluster Galaxies," $10,538

2010 NASA Chandra, "Imaging Strong Shocks in the Compact Steep Spectrum Radio Galaxy B3 1445+410," $44,177

2010 NASA Space Grant, "Towards an Understanding of Fueling on the Central Engine of Powerful Radio Galaxies," $10,000

2011 NASA Herschel, "Keeping the Cool Gas in Clusters Warm," $24,113

2011 NASA Space Grant, "A Graduate Research Fellowship in Astrophysical Sciences and Technology," $10,000

2012 HST Cycle 19, "AGN Feedback in Young, Radio-loud AGN," $7,948

2012 NASA Space Grant, "A Graduate Research Fellowship in Astrophysical Sciences and Technology,"

$10,000

2012 HST Cycle 16, "The Physics of the Jets of Powerful Radio Galaxies and Quasars," $22,348 (Admin PI, replacing David Axon)

2012 HST Cycle 20, "Universe in Transition: Powerful Activity in the Bright Ages," $26,949

Chandra Cycle 14, "Probing the High/Low Jet Power Dichotomy in AGN Jets with Chandra and HST," $22,925

2013 NASA Space Grant, "A Graduate Research Fellowship in Astrophysical Sciences and Technology," $10,000

**Meetings Organized**

NRAO Workshop No. 16 on "Continuum Radio Processes in Clusters of Galaxies," August 4–8, 1986 with J. M. Uson

Dwingeloo Workshop on "Compact Steep Spectrum and GHz Peaked Spectrum Radio Sources," June 19–20, 1990 with C. Fanti, R. Fanti, and R. Schilizzi

STScI Workshop on "Active Galactic Nuclei at High Redshifts," August 21–23, 1991 with A. Koratkar, T. Heckman, A Kinney, and E. Tolstoy

STScI Symposium on "Astrophysical Jets," May 12-14, 1992 with D. Burgarella, M. Fall, T. Heckman, M. Livio, D. Macchetto, C. Norman, N. Panagia, J. Pringle, and W. Sparks

STScI AGN Workshop on "Life Cycles of Radio Galaxies," July 15-17, 1999 with J. Biretta, P. Leahy, A. Koekemoer, E. Perlman, P. Barthel

"The Third Workshop on GPS and CSS Radio Sources," Kerastari, Greece, May 28-31, 2002 with Tazzo Tsumis, Richard Schilizzi, Carla Fanti, Roberto Fanti, Anton Koekemoer, Wim De Vries, Ignas Snellen, Geoff Bicknell

Astronomical Society of New York, Spring Meeting, Rochester, NY, April 2006, with Catherine Buchanan, Preeti Kharb, Dan Batcheldor, Andy Robinson

The 4th GPS/CSS Meeting, Riccione, Italy, May 26-29, 2008, with Daniele Dallacasa, Mike Dopita, Alvaro Labiano, Andrzej Marecki Raffaella Morganti, Dhruba Jyoti Saikia, Ignas Snellen, Carlo Stanghellini, Diana Worrall

Astronomical Society of New York, Spring Meeting, Rochester, NY, April 2009, with Preeti Kharb, Dan Batcheldor, Joel Kastner, Michael Richmond

**Proceedings Edited**

NRAO Workshop No. 16 on "Radio Continuum Processes in Clusters of Galaxies," August 4–8, 1986 with J. M. Uson.

Dwingeloo Workshop on "Compact Steep Spectrum and GHz Peaked Spectrum Radio Sources," June 19–20, 1990 with C. Fanti, R. Fanti, and R. T. Schilizzi

STScI Symposium on "Astrophysical Jets," May 12-14, 1992

with D. Burgarella and M. Livio

The Fourth Workshop on Compact Steep Spectrum and
GHz-Peaked Spectrum Radio Sources, May 26-29, 2008,
with Daniela Dallacasa and Karl-Heinz Mack

**Talks and Colloquia**

"Tailed Radio Galaxies as a Probe of Galaxy Orbits in Clusters," University of Groningen, Groningen, Netherlands, January 1988.

"Tailed Radio Galaxies as a Probe of Galaxy Orbits in Clusters," University of Leiden, Leiden, Netherlands, February 1988.

"Subarcsecond Resolution VLA Observations of Core-dominated Quasars," Netherlands Foundation for Research in Astronomy, Dwingeloo, Netherlands, March 1988.

"Subarcsecond Resolution VLA Observations of Core-dominated Quasars," University of Bonn, Bonn, Germany, June 1988.

"Subarcsecond Resolution VLA Observations of Core-dominated Quasars," Arecibo Observatory, Arecibo, PR, October 1988.

"Subarcsecond Resolution VLA Observations of Core-dominated Quasars," Istituto di Radioastronomia, Bologna, Italy, October 1988.

"Subarcsecond Resolution VLA Observations of Core-dominated Quasars," ESO, Garching, Germany, October 1988.

"Subarcsecond Resolution VLA Observations of Core-dominated Quasars," University of Groningen, Groningen, Netherlands, November 1988.

"Subarcsecond Resolution VLA Observations of Core-dominated Quasars," University of Leiden, Leiden, Netherlands, November 1988.

"Subarcsecond Resolution VLA Observations of Core-dominated Quasars," Jodrell Bank, Manchester, England, November 1988.

"CCD Observations of GHz-Peaked-Spectrum Radio Sources," VLA, Socorro, New Mexico, January 1989.

"Radio and Optical Observations of Powerful, Ultracompact GPS Radio Sources," Institut d'Astrophysique, Paris, France, October 1989.

"Powerful, Ultracompact Radio Sources," University of Pittsburgh, Pittsburgh, Pennsylvania, January 1990.

"Powerful, Ultracompact Radio Sources," University of Iowa, Iowa City, Iowa, January 1990.

"Powerful, Ultracompact Radio Sources," Space Telescope Science Institute, Baltimore, Maryland, February 1990.

"Powerful, Ultracompact Radio Sources," Pennsylvania State University, State College, Pennsylvania, February 1990.

"Powerful, Ultracompact Radio Sources," Columbia University, New York, New York, February 1990.

"Powerful, Ultracompact Radio Sources," University of Groningen, Groningen, The Netherlands, March 1990.

"What are the GHz-Peaked-Spectrum Radio Sources?" University of Leiden, Leiden, The Netherlands, March 1990.

"Powerful, Compact Radio Sources" University of Utrecht, Utrecht, The Netherlands, April 1990.

"Powerful, Compact GHz-Peaked-Spectrum Radio Sources: Frustrated Classical Doubles?" National Radio Astronomy Observatory, Charlottesville, VA, March 1991.

"What are the Powerful, Compact GHz-Peaked-Spectrum Radio Sources?" NASA – Goddard Space Flight Center, Geeenbelt, MD, March 1991.

"What are the Powerful, Compact GHz-Peaked-Spectrum Radio Sources?" University of Minnesota, Minneapolis, MN, May 1991.

"Ultra-Compact, Powerful Radio Sources: AGNs in Extremely Dense Environments?" Boston University, Boston, MA, October 1991.

"Ultra-Compact, Powerful Radio Sources: AGNs in Extremely Dense Environments?" Rutgers University, Piscataway, NJ, November 1991.

"GHz-Peaked Spectrum Radio Sources: Frustrated Classical Doubles?" University of Texas, Austin TX, March 1992.

"Optical and Radio Observations of 0218+357: The Smallest Einstein Ring?" University of Texas, Austin TX, March 1992.

"Optical and Radio Observations of 0218+357: The Smallest Einstein Ring?" STScI, April 1992.

"Young Radio Galaxies," SUNY, Stony Brook, NY, August 1992.

"0218+357: The Smallest Einstein Ring," SUNY, Stony Brook, NY, August 1992.

"0218+357: The Smallest Einstein Ring," NRAO - VLA, Socorro, NM, November 1992.

"0218+357: The Smallest Einstein Ring," Netherlands Foundation for Research in Astronomy, Dwingeloo, NL, January 1993.

"GPS Radio Sources: The Young and the Smothered," University of Maryland, College Park, MD, February 1993.

"0218+357: The Smallest Einstein Ring?" Caltech, Pasadena, CA, March 1993

"0218+357: The Smallest Einstein Ring?" Univ of Calif., Berkeley, CA, March 1993

"Spectroscopy of the Intracluster Medium: The Death of Cooling Flows?" STScI, Baltimore, MD, March 1993

"A Comparison of the Infrared Properties of Radio Loud AGN," STScI, Baltimore, MD, December 1993

"Obscuration, Orientation, Evolution, and the Infrared Properties of Radio-Loud Active Galaxies," University of Virginia, Charlottesville, VA, December 1993

"Extended HI Absorption in the Cooling Flow Cluster Abell 2597," STScI, Baltimore, MD, 21218, January 1994

"The Search for Cold Gas in the IntraCluster Medium," Institute for Astronomy, University of Hawaii, Honolulu, HI, February 1994

"The Search for Cold Gas in the IntraCluster Medium," National Radio Astronomy Observatory, Socorro, NM, July 1994

"Towards a Multiwavelength Perspective on the GHz Peaked Spectrum Radio Sources," Caltech, Pasadena, CA, November 1994

"Towards a Multiwavelength Perspective on the GHz Peaked Spectrum Radio Sources," National Radio Astronomy Observatory, Charlottesville, VA, February 1995

"Towards a Multiwavelength Perspective on the GHz Peaked Spectrum Radio Sources," Netherlands Foundation for Research in Astronomy," Dwingeloo, The Netherlands, August 1995

"The Search for Cold Gas in the IntraCluster Medium," Leiden University, Leiden, The Netherlands, August 1995

"The Search for Cold Gas in the IntraCluster Medium," Groningen University, Groningen, The Netherlands, August 1995

"X-ray and Optical Observations of GHz Peaked Spectrum Radio Sources," STScI, Baltimore, February 1996.

"The Birth of a Radio Galaxy," Goddard Space Flight Center, Greenbelt, MD, March 1996.

"The Birth of a Radio Galaxy," Boston University, Boston, MA, April 1996

"The Birth of a Radio Galaxy," Brandeis University, Waltham, MA, April 1996

"The Birth of a Radio Galaxy," Carnegie Observatories, Pasadena, CA, May 1996

"The Birth of a Radio Galaxy," University of California at Santa Barbara, Santa Barbara, CA, May 1996

"The Search for Cold Gas in the Intracluster Medium," Caltech, Pasadena, CA, May 1996

"The Birth of a Radio Galaxy," U.S. Naval Observatory, Washington, DC, June 1996

"The Origin and Evolution of Powerful Radio Galaxies," Dominion Astrophysical Observatory, Victoria, Canada, August 1996.

"The Birth of a Radio Galaxy," Naval Research Laboratory, Washington, DC, November 1996

"The Birth of a Radio Galaxy," STScI Colloquium, Baltimore, MD, March 1997

"Constraints on Radio Galaxy Evolution from the GHz Peaked Spectrum Radio Sources," IGPP/LLNL, August 1997

"Constraints on Radio Galaxy Evolution from the GHz Peaked Spectrum Radio Sources," University of New Mexico, Albuquerque, NM, June 1998

"Constraints on Radio Galaxy Evolution from the GHz Peaked Spectrum Radio Sources," Carnegie Observatories, Pasadena, CA, August 1998,

"Constraints on Radio Galaxy Evolution," New York University, New York, NY, April 1999

"Constraints on Radio Galaxy Evolution from the GHz Peaked Spectrum Radio Sources," University of Pennsylvania, Philadelphia, PA, May 1999

"A Study of Young Radio Galaxies and Constraints on Radio Galaxy Evolution from GPS Sources," National Radio Astronomy Observatory, Charlottesville, VA, June 1999

"Constraints on Radio Galaxy Evolution," Kapteyn Laboratory, University of Groningen, Groningen, The Netherlands, June 1999

"HST/WFPC2 Imaging of the Host Galaxies of Powerful AGN: Implications for the AGN Paradigm," LHEA, NASA - Goddard Space Flight Center, Geeenbelt, MD, September 1999

"Life Cycles of Radio Galaxies," Yale University, New Haven CT, April 2000

"HST and VLBA Observations of Low Luminosity Radio Galaxies," IGPP/LLNL, Livermore, CA, May 2000

"Life Cycles of Radio Galaxies," Institue of Astrophysics, Paris, France, November, 2000

"3C236, Radio Source, Interrupted?" Department of Physics, Penn State University, Reading, PA, January 2002

"Constraints on the Evolution of Powerful Radio Sources," AGN Journal Club, STScI, Baltimore, April 2003

"FUV Observations of the Emission Line Nebulae in A426, A1795, and A2597," Goddard Space Flight Center, Greenbelt, MD, October 2003

"Constraints on the Evolution of Powerful Radio Sources," University of Virginia, Charlottesville, VA, October 2003

"FUV Observations of the Emission Line Nebulae in A426, A1795, and A2597," National Radio Astronomy Observatory, GreenBank, WV, October 2003

"FUV Observations of the Emission Line Nebulae in A426, A1795, and A2597," University of Maryland, College Park, MD, October 2003

"FUV Observations of the Emission Line Nebulae in A426, A1795, and A2597," IGPP/LLNL, Livermore, CA, January 2004

"FUV Observations of the Emission Line Nebulae in A426, A1795, and A2597," Caltech, Pasadena, CA, February 2004

"FUV Observations of the Emission Line Nebulae in A426, A1795, and A2597," Rochester Institute of Technology, Rochester, NY February 2004

"FUV Observations of the Emission Line Nebulae in A426, A1795, and A2597," Pennsylvania State University, University Park, PA, February 2004

"FUV Observations of the Emission Line Nebulae in A426, A1795, and A2597," STScI, Baltimore, MD March 2004

"HST FUV Observations of the Central Nebulae in Clusters of Galaxies" Naval Research Lab, Washington DC, April 2004

"Constraints on the Evolution of Powerful Radio Sources," University of Rochester, Rochester, NY February 2005

"HST FUV Observations of the Central Nebulae in Clusters of Galaxies", Bucknell University, Lewisburg, PA, March 2005.

"Why are Some Brightest Cluster Galaxies Forming Stars?" Center for Computational Relativity and Gravitation at RIT, Rochester, NY, December 2007

"Why are Some Brightest Cluster Galaxies Forming Stars?" NRAO/University of Virginia, Charlottesville, VA, January 2008

"Why are Some Brightest Cluster Galaxies Forming Stars?" Michigan State University, East Lansing, MI, March 2008

"Why are Some Brightest Cluster Galaxies Forming Stars?" Brandeis University, Waltham, April 2008

"Why are Some Brightest Cluster Galaxies Forming Stars?" Harvard/Smithsonian Center for Astrophysics, Cambridge, MA, April 2008

"Why are Some Brightest Cluster Galaxies Forming Stars?" Institute for Radio Astronomy, Bologna, Italy, May 2008

"Why are Some Brightest Cluster Galaxies Forming Stars?" NRAO, Socorro, NM, Sept 26, 2008

"Spitzer Observations of Seyfert Galaxies" University of Rochester, Rochester, NY, Feb 2010

"Cool Stuff in Active Galactic Nuclei: Spitzer Space Telescope Infrared Observations of Seyfert Galaxies," College of Charleston, Charleston SC, 19 April 2010.

"Cool Stuff in Active Galactic Nuclei: Spitzer Space Telescope Infrared Observations of Seyfert Galaxies," Center for Astrophysics, Cambridge, MA, October 7, 2011

"Cool Stuff in Active Galactic Nuclei: Spitzer Space Telescope Infrared Observations of Seyfert Galaxies," Boston University, Boston, MA, March 5, 2012

"Feedback and Star Formation in Cooling Flows," Rochester Institute of Technology, Rochester, NY, August 22, 2012

"Black Holes and Galaxy Evolution," Texas A&M University, Corpus Christi, TX, March 25, 2013

"Black Holes and Galaxy Evolution," Oregon State University, Corvallis, OR, April 9, 2013

**Invited Talks**

"Obscuration, Orientation, and the Infrared Properties of Radio-Loud Active Galaxies," Physics of AGN conference, Mt. Stromlo Observatory, Canberra, Australia, July 1993

"Radio Observations of the IntraCluster Medium," Cooling Flow Workshop, University of Haifa at Orinim, Israel, August 1996

"Global Properties of GPS and CSS Sources: Constraints on Radio Source Evolution," Leiden Workshop on GPS and CSS Radio Sources, Leiden University, Netherlands, October 1996

"Introductary Remarks," STScI Workshop on Life Cycles of Radio Galaxies, Baltimore, MD, July 1999

"Evolution of Extragalactic Radio Sources," JENAM Meeting, Toulouse, France, September, 1999

"Jet-Cloud Interactions in Compact Radio Sources," Meeting on Emission Lines from Jet Flows," Isla Mujeres, Mexico, November, 2000

"The Mysterious Centers of Clusters of Galaxies," Astronomical Society of New York Meeting, Union College, Schenectady, NY, October 2005

**Contributed Talks**

"PKS 0745-191: The Archetypal Cooling Flow Radio Source?", NATO ASI on Clusters and Superclusters, Cambridge, UK, July 1991.

"GPS Quasars at High Redshift," STScI AGN meeting, STScI, October 1991.

"The Search for Cold Gas in the IntraCluster Medium," Workshop on Cold Gas at High Redshift, Hoogeveen, The Netherlands, August 1995

"X-ray and Optical Observations of GHz Peaked Spectrum Radio Sources," Workshop on Energy Transport in Radio Galaxies and Quasars," Tuscaloosa, AL, September 1995

"X-ray and Optical Properties of GPS Radio Galaxies," Leiden Workshop on GPS and CSS Radio Sources, Leiden University, Netherlands, October 1996

"Constraints on Radio Galaxy Evolution from the GHz Peaked Spectrum Radio Sources," IAU Symposium No. 164, Compact Radio Sources, Socorro, NM, April 1997

"Constraints on Radio Galaxy Evolution from the GHz Peaked Spectrum Radio Sources," Herstmonceaux Conference No. 39, Relativistic Jet, Cambridge, UK, July 1998

"3C236: Radio Galaxy, Interrupted?" Meeting on the Central Kpc of Starbursts and AGN, La Palma, Spain, May 2001

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