

CURRICULUM VITAE

JANE CHARLTON

Born: June 5, 1965. New Eagle, PA

Education:

1987, Ph.D., Astronomy and Astrophysics, University of Chicago
Thesis Title: "Cosmic String Wakes and Large Scale Structure"
Thesis Advisor: Professor David N. Schramm
1984, M.S., Astronomy and Astrophysics, University of Chicago
1983, B.S., Chemistry and Physics, Carnegie-Mellon University

Employment:

2003–present Professor of Astronomy and Astrophysics
The Pennsylvania State University
1998–2003 Associate Professor of Astronomy and Astrophysics
The Pennsylvania State University
1992–1998 Assistant Professor of Astronomy and Astrophysics
The Pennsylvania State University
1989–1992 Research Associate at Steward Observatory
University of Arizona
1987–1989 Research Associate in Astronomy
Cornell University
1986–1987 Research Assistant in Astronomy and Astrophysics
University of Chicago
1986 Teaching Assistant in Astronomy and Astrophysics
University of Chicago
1984–1986 Research Assistant in Astronomy and Astrophysics
University of Chicago
1983–1984 Teaching Assistant in Astronomy and Astrophysics
Univ. of Chicago

Honors and Awards:

2001 President's Award for Engagement with Students - Nominee
The Pennsylvania State University
1997 Faculty Associates Award for Teaching and Service
The Pennsylvania State University
1992 Annie Jump Cannon Special Commendation Honor
1990–1991 National Academy of Sciences U.S./U.S.S.R. Young Cosmologists Program

Memberships:

1992–present Center for Gravitational Physics and Geometry
The Pennsylvania State University
1984–present American Astronomical Society

National Committees:

2005	Hubble Space Telescope Cycle 14 Time Allocation Panel
2004	Hubble Space Telescope Cycle 13 Time Allocation Panel
2003	NSF CAREER Award Review Panel
2002–2005	Financial Review Committee for the Hubble Space Telescope
2001–2006	Publications Board of the American Astronomical Society
2001–2004	Multiwavelength Users Group for Space Telescope Science Institute
2000	FUSE Proposal Selection Committee
2000	Hubble Fellowship Selection Committee
1999	Hubble Space Telescope Cycle 9 Time Allocation Committee, Extragalactic
1999	NASA LTSA/ADP Review Panel, Active Galaxies and Quasars
1999	NSF Site Visit for Science and Technology Center
1998	NASA LTSA/ADP Review Panel, Galaxies (CHAIR)
1998	NSF Advanced Technologies and Instrumentation
1998	McDonald Observatory Time Allocation Committee
1997	Astronomical Capabilities to Support Large Telescopes, Gemini Workshop
1997	NASA Long Term Space Astrophysics Review Panel, Cosmology
1996	NSF Academic Research Infrastructure Program Review Panel
1995	Hubble Space Telescope Time Allocation Committee, Galaxies and Clusters
1994	NASA Astrophysical Data Program Proposal Review Panel, Cosmology

Departmental Committees:

2004–2005	Member of Tenure and Promotion Committee
2004–present	Member of Candidacy Exam Committee
2004–2005	Chair of Teaching Evaluation Committee
2003–2004	Chair of Colloquium Committee
2003–present	Member of Outreach Committee
1999–2003	Chair of Outreach Committee
1999–present	Member of Undergraduate Program Committee
1999–2002	Member of Graduate Admissions Committee
1992–1996, 1997–2004	Graduate Program Committee
1999–2000	Chair of Faculty Search Committee
1998–2000	Chair of Teaching Evaluation Committee
1997–1999	Chair of Graduate Admissions
1997–1999	Outreach Committee
1997–1998	Faculty Search Committee
1995–2003	Hobby Eberly Telescope Advisory Committee
1992–1996	Ad-hoc Member of the Outreach Committee
1995–1996	Chair of Theory Lunch
1994	Headship Search Committee
1994	Junior Faculty Search Committee

University and College Committees:

2005–present	Eberly College of Science Outreach Committee
2001–2004	Faculty Member of Teaching and Learning Consortium
1997–1998	Graduate Council Subcommittee on Program Review and Evaluation
1996	AD-14 Committee to Review Dean Geoffroy’s Administration
1993–1996	University Faculty Senate
1993–1996	Faculty Senate Subcommittee on Curricular Affairs

Research Papers

(* signifies a Penn State graduate student; @ indicates a Penn State undergraduate)

Refereed Publications:

Charlton, Jane C. and Meyer, Bradley S. “On H-Alpha Variability in Alpha-Lyrae,” *Publications of the Astronomical Society of the Pacific*, **97** (1985) 60-61.

Charlton, Jane C. and Schramm, David N., “Percolation of Explosive Galaxy Formation,” *Astrophysical Journal*, **310** (1986) 26-39.

Charlton, Jane C. and Turner, Michael S., “Kinematic Tests of Exotic Flat Cosmological Models,” *Astrophysical Journal*, **313** (1987) 495-504.

Charlton, Jane C., “Cosmic String Wakes and Large Scale Structure,” *Astrophysical Journal*, **325** (1988) 510-530.

Charlton, Jane C. and Salpeter, Edwin E., “Sporadic Mass Loss, Spin-Down, and Element Redistribution in Young Disk Galaxies,” *Astrophysical Journal*, **346** (1989) 101-107.

Charlton, Jane C. and Salpeter, Edwin E., “Galaxy Pairs in Redshift Catalogs as a Probe of Dark Matter,” *Astrophysical Journal*, **375** (1991) 517-531.

Charlton, Jane C., Salpeter, Edwin E., and Hogan, Craig J., “Equilibrium Slab Models of Ly α Clouds,” *Astrophysical Journal*, **402** (1993) 493-513.

Charlton, Jane C., Salpeter, Edwin E., and *Linder, Suzanne M., “Competition Between Pressure and Gravity Confinement in Lyman-alpha Forest Observations,” *Astrophysical Journal*, **430** (1994) L29-L32.

Charlton, Jane C. and Laguna, Pablo, “Competition of Supermassive Black Holes and Galactic Spheroids in the Destruction of Globular Clusters,” *Astrophysical Journal*, **444** (1995) 193-199.

*Bartlett, Roger and Charlton, Jane C., “Comparison of N-body Simulations to Statistical Observations of Galaxy Pairs,” *Astrophysical Journal*, **449** (1995) 497-507.

Charlton, Jane C., Churchill, Christopher W., and *Linder, Suzanne M., “Probing Lyman-alpha Absorbers with Double Lines of Sight,” *Astrophysical Journal*, **452** (1995) L81-L85.

- *Best, Jason S., Charlton, Jane C., and Mayer-Kress, Gottfried, “Analysis of Galaxy Morphology and Evolution Using the Pointwise Dimension,” *Astrophysical Journal*, **456** (1996) 55-64.
- *Hunsberger, Sally D., Charlton, Jane C., and Zaritsky, Dennis, “The Formation of Dwarf Galaxies in the Compact Group Environment,” *Astrophysical Journal*, **462** (1996) 50-56.
- Charlton, Jane C. and Churchill, Christopher W., “MgII Absorbing Galaxies: Halos or Disks?,” *Astrophysical Journal*, **465** (1996) 631-645.
- Charlton, Jane C., Anninos, Peter, Zhang, Yu, and Norman, Michael L., “Probing Lyman-alpha Absorbers in Cosmological Simulations with Double Lines of Sight,” *Astrophysical Journal*, **485** (1997) 26-38.
- Charlton, Jane C. and Churchill, Christopher W., “The Kinematic Composition of MgII Absorbers,” *Astrophysical Journal*, **499** (1998) 181.
- *Ganguly, Rajib, Churchill, Christopher W., and Charlton, Jane C., “An Aluminum Enhanced Cloud in a CIV Absorber at $z = 1.94$,” *Astrophysical Journal*, **498** (1998) L103-L106.
- *Hunsberger, Sally D., Charlton, Jane C., and Zaritsky, Dennis, “The Luminosity Function of Galaxies in Compact Groups,” *Astrophysical Journal*, **505** (1998) 536-557.
- @Nordquist, Holly K., @Klinger, Robert J., Laguna, Pablo, and Charlton, Jane C., “Distortion of Globular Clusters by Galactic Bulges,” *MNRAS*, **304** (1999) 288-297.
- Churchill, Christopher W., @Rigby, Jane R., Charlton, Jane C., and Vogt, Steven S., “The Population of Weak Mg II Absorbers I. A Survey of 26 QSO HIRES/Keck Spectra,” *Astrophysical Journal Supplement*, **120** (1999) 51-75.
- *Ganguly, Rajib, Eracleous, Michael, Charlton, Jane C., and Churchill, Christopher W., “Intrinsic Narrow Absorption Lines in HIRES/Keck Spectra of a Sample of Six QSOs,” *Astronomical Journal*, **117** (1999) 2594-2607.
- Bershady, Matthew A., Charlton, Jane C., and @Geoffroy, Janet M., “The Distribution of High Redshift Galaxy Colors: Line of Sight Variations in Neutral Hydrogen Absorption,” *Astrophysical Journal*, **518** (1999) 103-116.
- Churchill, Christopher W., and Charlton, Jane C., “The Multiple Phases of Interstellar and Halo Gas in a Possible Group of Galaxies at $z \sim 1$,” *Astronomical Journal*, **118** (1999) 59-75.
- Churchill, Christopher W., @Mellon, Richard R., Charlton, Jane C., Jannuzi, Buell T., Kirhakos, Sofia, and Steidel, Charles C., “The CIV Absorption – MgII Kinematics Connection in $z \sim 0.7$ Galaxies,” *Astrophysical Journal*, **519** (1999) L43-L46.

- Churchill, Christopher W., @Mellon, Richard R., Charlton Jane. C, Jannuzi, Buell T., Kirhakos, Sofia, and Steidel, Charles C., “Low and High Ionization Absorption Properties of MgII Absorption Selected Galaxies at Intermediate Redshifts. I. General Properties,” *Astrophysical Journal Supplements*, **130** (2000) 91-119.
- Churchill, Christopher W., @Mellon, Richard R., Charlton Jane. C, Jannuzi, Buell T., Kirhakos, Sofia, and Steidel, Charles C., “Low and High Ionization Absorption Properties of MgII Absorption Selected Galaxies at Intermediate Redshifts. II. Taxonomy, Kinematics, and Galaxies,” *Astrophysical Journal*, **543** (2000) 577-598.
- Charlton, Jane C., @Mellon, Richard R., @Rigby, Jane R., and Churchill, Christopher W., “Anticipating High-Resolution STIS Spectra of Four Multiphase MgII Absorbers: A Test of Photoionization Models,” *Astrophysical Journal*, **545** (2000) 635-656.
- Charlton, Jane C., Churchill, Christopher W., and @Rigby, Jane R., “QSO Absorption Line Constraints on Intragroup High-Velocity Clouds,” *Astrophysical Journal*, **544** (2000) 702-706.
- Ganguly, Rajib, @Bond, Nicholas A., Charlton, Jane C., Eracleous, Michael, Brandt, W. N., and Churchill, C. W., “On the Origin of Intrinsic Narrow Absorption Lines in $z \sim 1$ QSOs,” *Astrophysical Journal*, **549** (2001) 133-154.
- Bouché, Nicholas, Lowenthal, James D., Charlton, Jane C., Bershad, M. A., and Churchill, Christopher W., “ $H\alpha$ Imaging with HST and NICMOS of an Elusive Damped Ly α Cloud at $Z = 0.6$,” *Astrophysical Journal*, **550** (2001) 585-592.
- *Ganguly, Rajib, Charlton, Jane C., and @Bond, Nicholas A., “The Absorbers toward CSO 118: Superclustering at Z 3, or an Intrinsic Absorption Complex?,” *Astrophysical Journal*, **553** (2001) L101-L104.
- @Bond, Nicholas A., Churchill, Christopher W., Charlton, Jane C., and Vogt, Steven S., “Evidence for Expanding Superbubbles in a Galaxy at $z = 0.7443$,” *Astrophysical Journal*, **557** (2001) 761-769.
- *Gallagher, Sarah C., Charlton, Jane C., Hunsberger, Sally D., and Zaritsky, D. “HST Images of Stephan’s Quintet: Star Cluster Candidates in a Compact Group Environment,” *Astronomical Journal*, **122** (2001) 163-181.
- *Ganguly, Rajib, Charlton, Jane, C., and Eracleous, M., “Variable Ultraviolet Absorption in the Spectrum of MR 2251 – 178,” *Astrophysical Journal*, **556** (2001) L7-L10.
- @Bond, Nicholas A., Churchill, Christopher, W., Charlton, Jane C., and Vogt, Steven S., “High-Redshift Superwinds as the Source of the Strongest Mg II Absorbers: A Feasibility Analysis,” *Astrophysical Journal*, **562** (2001) 641–648.
- @Rigby, Jane R., Charlton, Jane C., Churchill, Christopher W., “The Population of Weak MgII Absorbers. II. The Properties of Single-Cloud Systems,” *Astrophysical Journal*, **565** (2002) 743–758.

- Palma, Christopher, Zonak, Stephanie G., Hunsberger, Sally D., Charlton, Jane C., Gallagher, Sarah C., and Durrell, Patrick R., “The Beginning of the End: Hubble Space Telescope Images of Seyfert’s Sextet,” *Astronomical Journal*, **124** (2002) 2425–2439.
- Eracleous, Michael, Halpern, Jules P, and Charltonk Jane C., “The ASCA X-Ray Spectrum of Arp 102B and Evaluation of Simple Models for Its Associated, Metastable FeII Absorber.” *Astrophysical Journal*, **582** (2003) 633–644.
- Churchill, Christopher W., Vogt, Steven S., and Charlton, Jane C., “The Physical Conditions of Intermediate Redshift MgII Absorbing Clouds from Voigt Profile Analysis.” *Astronomical Journal*, **125** (2003) 98–115.
- Charlton, Jane C., *Ding, Jie, @Zonak, Stephanie G., Churchill, Christopher W., and @Bond, Nicholas A., “High Resolution STIS/HST and HIRES/Keck Spectra of Three Weak Absorbers Toward PG 1634 + 706.” *Astrophysical Journal*, **589** (2003) 111–125.
- *Ding, Jie, Charlton, Jane C., @Zonak, Stephanie G, and Churchill, Christopher W., “A Quadruple Phase Strong MgII Absorber at $z \sim 0.9902$ Toward PG 1634+706.” *Astrophysical Journal*, **587** (2003) 551–561.
- *Ding, Jie, Charlton, Jane C., Churchill, Christopher W., and Palma, Christopher, “The Multi-phase Absorption Systems Toward PG 1206+459.” *Astrophysical Journal*, **590** (2003) 746–769
- @Knierman, Karen A., Hunsberger, Sally D., Charlton, Jane C., Whitmore, B., Kundu, A., Hibbard, J., and Zaritsky, D., “From Globular Clusters to Tidal Dwarfs: Structure Formation in the Tidal Tails of Merging Galaxies.” Resubmitted to *Astronomical Journal*, **126** (2003), 1227–1244.
- Churchill, Christopher W., @Mellon, Richard R., and Charlton, Jane C., “The Spatial, Ionization, and Kinematic Conditions of the $z = 1.39$ Damped Ly α Absorber.” *Astrophysical Journal*, **593** (2003), 203–214.
- *Ganguly, Rajib, @Masiero, Joseph, **Charlton, J. C.**, and Sembach, Kenneth, R., “An Intrinsic Absorption Complex toward RX J1230.8+0115: Geometry and Photoionization Conditions,” *Astrophysical Journal*, **598** (2003) 922–934.
- Gallagher, Sarah. C., Brandt, W. Nielson, Wills, Beverly J., **Charlton, Jane C.**, Chartas, George, & Laor, Ari, “Dramatic X-ray Spectral Variability of the Broad Absorption Line Quasar PG2112+059,” *Astrophysical Journal*, **603** (2004), 425–435.
- @Zonak, Stephanie G., **Charlton, Jane C.**, *Ding, Jie, & Churchill, Christopher W., “The Absorption Signatures of Dwarf Galaxies: The $z=1.04$ Multi-cloud Weak MgII Absorber Toward PG1634+706,” *Astrophysical Journal*, **606** (2004), 196–212.
- *Wise, John H., Eracleous, Michael, **Charlton, Jane C.**, and Ganguly, R., “Variability of Narrow, Associated Absorption Lines in Nearby Quasars.” *Astrophysical Journal*, **613** (2004), 129–150.

*Ding, Jie, **Charlton, Jane C.**, & Churchill, Christopher W., “The Absorption Signature of Six MgII–Selected Systems Over $0.5 \leq z \leq 0.9$,” *Astrophysical Journal*, **621** (2005), 615–634.

@Masiero, Joseph R., **Charlton, Jane C.**, *Ding, Jie, Churchill, Chris W., & Kacprzak, Glenn, “Models of Five Absorption Line Systems Along the Line of Sight Toward PG0117+213,” *Astrophysical Journal*, **623** (2005), 57–78.

Misawa, Toru, Eracleous, Michael, **Charlton, Jane C.**, & Tajitsu, Akito, “Time-Variable Complex Metal Absorption Lines in the Quasar HS 1603+3820,” *Astrophysical Journal*, **629** (2005), 115–130.

*Narayanan, Anand, **Charlton, Jane C.**, @Masiero, Joseph R., & @Lynch, Ryan, “A Survey of Analogs to Weak MgII Absorbers in the Present,” *Astrophysical Journal*, (2005), in press.

Papers submitted:

Palma, Christopher, Hunsberger, Sally D., **Charlton, Jane C.**, Durrell, Patrick R., & Gallagher, Sarah C., “A Catalogue of Candidate Dwarf Galaxies in Stephan’s Quintet from Hubble Space Telescope WFPC2 Images,” *Astronomical Journal*, (2005), submitted

@Lynch, Ryan, **Charlton, Jane C.**, & Kim, Tae-Sun, “A Survey of Weak MgII Absorbers at Redshift $|z_i|=1.78$,” *Astrophysical Journal*, (2005), submitted

@Milutinovic, Nikola, Rigby, Jane R., @Masiero, Joseph R., @Lynch, Ryan S., Palma, C., & Charlton, Jane C., “Housing Weak Low Ionization Absorbers in the Cosmic Web,” *Astrophysical Journal*, (2005), submitted

Parts of Books:

Charlton, Jane C. and Schramm, David N., “Topics at the Interface of Particle Physics and Cosmology”, in *Proceedings of the Fourth School on Gravitation and Cosmology*, Rio de Janeiro (1984).

Schramm, David N. and Charlton, Jane C., “Cosmology and Particle Theory”, in *Proceedings of Ecole d’Ete de Physique Theorique*, Les Houches, France (1985).

Schramm, David N. and Charlton, Jane C., “Constraints on Particle Physics from Cosmology”, *Annals of the New York Academy of Sciences* **461** (1986) 431-445.

Charlton, Jane C. and Salpeter, Edwin E., “Pairs of Galaxies in Low Density Regions of a Combined Redshift Catalog”, in *IAU Symposium 124: Paired and Interacting Galaxies*, (NASA: Washington) (1990) 19-24.

Charlton, Jane C. and Salpeter, Edwin E., “Dark Matter, Mergers, and Morphology: Clues from Galaxy Pairs”, in *After the First Three Minutes*, (AIP: New York) (1991) 385-388.

- Charlton, Jane C., Whitmore, Bradley C., and Gilmore, Diane M., “Pairs in Groups and Clusters”, in *Groups of Galaxies*, (ASP: San Francisco) (1995) 49-56.
- Charlton, Jane C., “Models of Ly α Clouds”, in *QSO Absorption Lines*, (Springer Verlag: Garching) (1995) 405-419.
- Charlton, Jane C. and Churchill, Christopher W., “QSO Absorption Line Systems as a Probe of Galaxies Like the Milky Way”, in *Galactic Chemodynamics 4: The History of the Milky Way and its Satellite System*, (PASP Conference Series) (1996) 63-72.
- Charlton, Jane C. and Churchill, Christopher W., “MgII Absorbers: Disks, Halos, Satellites, and Pairs?”, in *IAGUSP Workshop on Young Galaxies and QSO Absorbers*, (PASP Conference Series) (1997) 55-58.
- Charlton, Jane C., “The Intergalactic Medium and Galaxy Evolution at High Redshift”, in *The Ultraviolet Universe at Low and High Redshift: Probing the Progress of Galaxy Evolution*, (AIP Press: New York) (1998) 303-312.
- Charlton, Jane C. and Churchill, Christopher W., “The Distribution of Gas In and Around Galaxies”, in *13th IAP Workshop: Evolution of the Intergalactic Medium From QSO Absorption Lines Systems*, (AIP Press: New York) (1998) 223-228.
- Churchill, Christopher W. and Charlton, Jane C., “Kinematics and Cloud to Cloud Abundance Ratios: A Rosetta Stone for Disk and Halo Components in MgII Absorbers”, in *Proceedings of the UV Santa Cruz Workshop on Galactic Halos*, (PASP Conference Series) (1998) 187-192.
- Gallagher, Sarah C., Hunsberger, Sally D., Charlton, Jane C., and Zaritsky, D., “HST Images of Stephan’s Quintet: Star Cluster Candidates in a Compact Group Environment”, in *Proceedings of Massive Stellar Clusters, Strasbourg, France* (2000) 247-253.
- Hunsberger, Sally D., Gallagher, Sarah C., Charlton, Jane C., and Zaritsky, D., “HST Images of Stephan’s Quintet: Star Cluster Candidates in a Compact Group Environment”, in *Proceedings of Massive Stellar Clusters, Strasbourg, France* (2000) 254-257.
- Charlton, Jane, Knierman, Karen, Hunsberger, Sally, Gallagher, Sarah, Whitmore, Bradley, Kundu, Arunav, and Hibbard, John, “From Globular Clusters to Tidal Dwarfs: Structure Formation in Tidal Tails”, in *Ten Years of Hubble Space Telescope* (2000) 20-23.
- Churchill, Christopher, Mellon, Richard, Charlton, Jane, and Jannuzi, Buell, “Multiphase Gas in Intermediate Redshift Galaxies”, in *Ten Years of Hubble Space Telescope* (2000) 24-27.
- Ganguly, Rajib, Bond, Nicholas A., Charlton, Jane C., Eracleous, Michael, Brandt, W. Nielson, Churchill, Christopher W., “On the Origins of QSO-intrinsic Narrow Absorption Lines”, in *Guillermo Haro Advanced Lectures on the Starburst-AGN Connection* (2001).

- Ganguly, Rajib, Bond, Nicholas A., Charlton, Jane C., Eracleous, Michael, Brandt, W. Nielson, Churchill, Christopher W., “On the Origins of QSO-intrinsic Narrow Absorption Lines”, in *Ten Years of Hubble Space Telescope* (2001) 36-39.
- Rigby, Jane R., Charlton, Jane C., and Churchill, Christopher W., “Weak MgII Absorbers at $z \sim 1$: Low $N(\text{HI})$ HVCs, SNR in Dwarf Galaxies, or Population III Remnants”, in *ASP proceedings “Gas and Galaxy Evolution”* (2001) 58-60.
- Charlton, Jane C., Churchill, Christopher W., and Rigby, Jane R. “QSO Absorption Line Constraints on Intra-group High-Velocity Clouds”, in *ASP proceedings “Gas and Galaxy Evolution”* (2001) 487-492.
- Charlton, Jane C., Churchill, Christopher W., Ding, Jie, Zonak, Stephanie, Bond, Nicholas A., and Rigby, Jane R., “Phase Structure of Weak MgII Absorbers: Star Forming Pockets Outside of Galaxies”, in *ASP proceedings “Extragalactic Gas at Low Redshift”* (2002) 122-131.
- Churchill, Christopher W., Charlton, Jane C., and Masiero, Joseph R., “Mapping Metal-Enriched High Velocity Clouds to Very Low HI Column Densities”, in *ASP proceedings “Extragalactic Gas at Low Redshift”* (2002) 236-244.
- Ganguly, Rajib, Sembach, Kenneth R., & Charlton, Jane C., “A Comparison Of Virgo Cluster Absorption Along Two Sight Lines,” in *ASSL Conference Proceedings Vol. 281* (2003) 283-284.
- Charlton, Jane, “Absorption Signatures of the Gaseous Phases of Galaxies,” in *ASSL Conference Proceedings Vol. 281* (2003) 143-146
- Ganguly, Rajib, Masiero, Joseph, Charlton, Jane C., & Sembach, Kenneth R. “The Exquisite Spectrum of RX J1230.8+0115,” in *ASP Conference Proceedings Vol. 291* (2003) 367-368
- Charlton, Jane, “Studying the Gaseous Phases of Galaxies with Background QSOs,” in *ASP Conference Proceedings Vol. 291* (2003) 172-176
- Ganguly, Rajib, Sembach, Kenneth R., Charlton, Jane C., Eracleous, Michael, Palma, Christopher, & Tripp, Todd 2004, “Intrinsic Narrow Absorption Lines in the HST/STIS Echelle Archive”, in *ASP Conference Proceedings Vol. 311* (2004), 243-246

Research Support

(amounts are PSU share in cases with outside collaborators)

Completed:

- (\$169,000): NASA UV, Visible, and Gravitational Astrophysics Research and Analysis Program, “QSO Absorption Line Systems and Their Relationship to Galaxies”, (P.I.; 1993-1996).
- (\$15,000): National Science Foundation, “Research Experiences for Undergraduates Supplement”, (P.I., with Ciardullo (PSU) as co-P.I.; 1997).

- (\$130,000): National Science Foundation Extragalactic Program, “Dwarf Galaxies and Their Formation: A Study in the Compact Group Environment”, (P.I., with Ciardullo (PSU) as co-P.I.; 1996-1999).
- (\$19,500): National Science Foundation, “Research Experiences for Undergraduates Supplement”, (P.I., with Ciardullo (PSU) as co-P.I.; 1998).
- (\$21,500): National Science Foundation, “Research Experiences for Undergraduates Supplement”, (P.I., with Churchill (PSU) as co-P.I.; 1999).
- (\$39,974): NASA Hubble Space Telescope Grant (Archival), “The Neutral and High Ionization Gas in 51 MgII Absorption Systems”, (co-P.I., with Churchill as P.I.; 1998-1999).
- (\$42,000): NASA Hubble Space Telescope Grant, “Formation of Stellar Systems in Mergers in a Compact Group of Galaxies”, (P.I., with Hunsberger (PSU) and Zaritsky (UCSC) as co-P.I.’s; 1998-2000).
- (\$13,000): NASA Hubble Space Telescope Grant, “H-alpha Imaging of an Elusive Damped Lyman-alpha Cloud at $z=0.6$ ”, (Co-I, with P.I. Lowenthal (UMass); Bershadsky (Wisc), Churchill (PSU), and Steidel (Caltech) are also co-P.I.’s; 1997-2000).
- (\$185,000): National Science Foundation Extragalactic Program, “The History of Galactic Gas at Redshifts 2.5 to 4.0: Near-IR Spectroscopy with the 8-m Hobby Eberly Telescope”, (P.I., with Churchill, Ramsey, Schneider (PSU) as co-P.I.’s; 1997-2000).
- (\$60,000): NASA Hubble Space Telescope Grant, “From Globular Clusters to Tidal Dwarfs: Structure Formation in Tidal Tails”, (P.I., with Barnes (Hawaii), Hibbard (NRAO), Whitmore (STScI), and Zaritsky (UCSC) as co-P.I.’s; 1998-2000).
- (\$24,500): National Science Foundation, “Research Experiences for Undergraduates Supplement”, (P.I., with Churchill (PSU) as co-P.I.; 2000).
- (\$57,842): NASA Hubble Space Telescope Grant, “The Cause of Narrow Absorption Lines Intrinsic to Quasars”, (P.I., with Eracleous and Brandt (PSU) as co-P.I.’s; 2000-2002).
- (\$15,500): National Science Foundation, “Research Experiences for Undergraduates Supplement”, (P.I.; 2001).
- (\$285,000): NASA Long Term Space Astrophysics Program, “The Gas and the Stars of Intermediate Redshift Galaxies”, (P.I., with Churchill (PSU) as co-P.I.; 1997-2003).
- (\$92,812): NASA Hubble Space Telescope Grant, “A Snapshot Survey of Variability of Narrow and Broad Absorption Lines in Quasars”, (P.I., with Eracleous and Brandt (PSU) as co-P.I.’s; 2000-2003).
- (\$42,602): NASA Hubble Space Telescope Grant, “Observations of Stellar Systems in Seyfert’s Sextet”, (co-P.I., with Hunsberger (PSU) as P.I.; 2000-2003).
- (\$57,974): National Science Foundation, “MgII Absorbers at High Redshift Using J-band High Resolution Spectroscopy on the Hobby Eberly Telescope”, (co-P.I., with Churchill (PSU) as P.I.; 2001-2003).
- (\$153,988): NASA Hubble Space Telescope Grant, “Establishing the Gaseous Phases of Galaxies Following the Epoch of Star Formation”, (co-P.I., with Churchill (PSU) as P.I., and with Mellon (Virginia) and Rigby (Arizona) as co-P.I.’s; 2000-2003).

- (\$64,808): NASA Hubble Space Telescope Grant, “Looking Out Through the Galaxy”, (P. I., with Churchill (PSU) and Sembach (Hopkins) as co-P.I.’s; 2001-2002).
- (\$15,500): National Science Foundation, “Research Experiences for Undergraduates Supplement”, (P.I.; 2003-2004).
- (\$8,773): NASA Hubble Space Telescope Grant, “An Absorption Study of PG 2112+059: the X-ray Brightest BAL QSO Known”, (P.I.;2002-2004).
- (\$181,530): National Science Foundation Extragalactic Program, “Creation and Destruction of Dwarf Galaxies in Interactions: Evaluating the Environmental Influences and the Global Importance”, (P.I.; 2000-2005).
- (\$20,500): National Science Foundation, “Research Experiences for Undergraduates Supplement”, (P.I.; 2004-2005).

In Progress:

- (\$59,164): Supplement to NASA Hubble Space Telescope Grant, “Establishing the Gaseous Phases of Galaxies Following the Epoch of Star Formation”, (P.I., with Churchill (NMSU), Mellon (Virginia) and Rigby (Arizona) as co-P.I.’s; 2003-2005).
- (\$514,662): NASA Long Term Space Astrophysics Program, “A Survey and Comprehensive Study of the Narrow Absorption Lines Gas Intrinsic to QSOs”, (co-P.I., with Eracleous (PSU) as P.I.; 2000-2005).
- (\$508,993): NASA Long Term Space Astrophysics Program, “Evolution of Gaseous Structures Through QALs”, (P.I.; 2004-2009).
- (\$252,515): National Science Foundation, “Quasar Absorption Lines: Probing Galactic Gas at Redshifts One to Two”, (P.I.; 2004–2007).
- (\$9,800): NASA Spitzer Science Center, “Where is the Dust and Star Formation in Compact Groups of Galaxies?,” (co-P.I., with Johnson (Virginia) as P.I.; 2004-2006).
- (\$19,500): National Science Foundation, “Research Experiences for Undergraduates Supplement”, (P.I.; 2005-2006).
- (\$48,502): NASA Hubble Space Telescope IDEAS Program, “Learning Astronomy at Penn State Through a Science Fiction Web-based Video Game Adventure” (P.I., with Palma (PSU) as co-I.; 2005–2007)

Postdocs:

<u>Years</u>	<u>Name</u>	<u>Status</u>
2005-pres.	Aparna Chitre	Postdoctoral Fellow (Interacting Galaxies)
2004-pres.	Toru Misawa	Postdoctoral Fellow (Intrinsic Absorption)
2001–2003.	Chris Palma	Postdoctoral Fellow (Interacting Galaxies)
1998–2003.	Chris Churchill	Research Associate (Quasar Absorption Lines)
1996–1998	Chris Churchill	Postdoctoral Fellow (Quasar Absorption Lines)

Graduate Students:

<u>Years</u>	<u>Name</u>	<u>Status</u>
2005–pres	Jian Wu	Grad. Research Asst. (Intrinsic Absorption)
2003–pres	Anand Narayanan	Grad. Research Asst. (Quasar Absorption Lines)
2000–2004	Jie Ding	Ph.D. 2004 (Quasar Absorption Lines) (currently M.S. student at NYU)
1996–2002	Rajib Ganguly	Ph.D. 2002 (Quasar Intrinsic Absorption Lines) (currently postdoc at STScI)
1999	Sarah Gallagher	Grad. Research Asst. (Interacting Galaxies) (currently postdoc at MIT)
1993–1999	Suzanne Linder	Ph.D. 1998 (Theoretical Ly α Clouds) (currently postdoc at Cardiff U.)
1993–1998	Sally Hunsberger	Ph.D. 1998 (Dwarf Galaxies in Compact Groups) (currently at PSU/Swift)
1993–1997	Jason Best	Ph.D. 1997 (Large-Scale Structure) (currently asst. prof. at Shepherds College)
1993–1994	Roger Bartlett	Ph.D. student (N-body simulations of galaxy pairs)

Research Undergraduate Students:

<u>Years</u>	<u>Name</u>	<u>Status</u>
1994–1995	Alex Fagelson	Undergrad. (Clustering of Galaxies in Compact Groups)
1994–1995	Daniel Gallton	Undergrad. (Evolution of Ly α Forest) (currently with NASA/Astronaut Program)
1994–1995	Mark Ludwick	Undergrad. Scholar (Morphology in Galaxy Clusters)
1995–1996	Robert Klinger	Undergrad. (Tidal Distortions of Globular Clusters) (currently grad. student at Illinois)
1996–1998	Andrew Glenn	Undergrad. Scholar (Metallicities of Tidal Dwarfs) (currently grad. student at Wisconsin)
1996–1997	Janet Geoffroy	Undergrad. Scholar (High Redshift Galaxy Colors) (currently with IBM)
1997–2000	Jane Rigby	Undergrad. Scholar (Weak MgII Absorbers/JCAM) (currently grad. student at Arizona)
1997–1998	Lester Chou	Undergrad. Scholar (HET/JCAM Instrumentation)
1998–2000	Karen Knierman	Undergrad. Scholar (Interacting Galaxies) (currently grad. student at Arizona)
1998–2002	Richard Mellon	Undergrad. Scholar (Quasar Absorption Lines) currently grad. student at U. Virginia
1999–2002	Nicholas Bond	Undergrad. (Quasar Absorption Lines) currently grad. student at Princeton U.
1999–2002	Stephanie Zonak	Undergrad. (Interacting Galaxies) currently grad. student at U. Maryland
2000–2004	Joseph Masiero	Undergrad (Quasar Absorption Lines) currently grad. student at U. Hawaii
2003–pres.	Ryan Lynch	Undergrad (Intrinsic Absorption)
2003–pres	Nikola Milutinovic	Research Assistant (Quasar Absorption Lines)
2003	Benjamin Lackey	Research Assistant (Intrinsic Absorption)
2004–pres	Joshua Tobolewski	Research Assistant (Dwarf Galaxies)
2005–pres	Andrew Mshar	Research Assistant (Quasar Absorption Lines)
2005–pres	Brian Lacki	Research Assistant (Quasar Absorption Lines)

Teaching Assignments:

Semester	Course Number	Course Title	Enrollment	Credits
S93	Astro97A	The Big Bang Universe	14	3
F93	Astro1	The Astronomical Universe	297	3
F93	Astro596	Individual Studies	4	22 total
S94	Astro120	The Big Bang Universe	28	3
S94	Astro296H	Independent Studies	1	3
S94	Astro596	Individual Studies	2	8 total
F94	Astro1	The Astronomical Universe	337	3
F94	Astro596	Fall Research Project	4	6
S95	Astro505	Adv. Theoretical Astrophys.	8	3
F95	Astro1	The Astronomical Universe	367	3
F95	Astro296	Independent Studies	1	1
S96	Astro120	The Big Bang Universe	32	3
F96	Astro1	The Astronomical Universe	367	3
F96	Astro596	Individual Studies	1	3
S97	Astro120	The Big Bang Universe	35	3
F97	Astro1	The Astronomical Universe	375	3
S98	Astro504	Extragalactic Astronomy	4	3
F98	Astro1	The Astronomical Universe	375	3
S99	Astro120	The Big Bang Universe	38	3
F99	Astro120	The Big Bang Universe	42	3
S00	Astro504	Extragalactic Astronomy	6	1.5
S00	Astro11	Astronomical Universe – Lab	24	1
S00	Astro11	Astronomical Universe – Lab	12	1
F00	Astro120	The Big Bang Universe	40	3
S01	Astro1	The Astronomical Universe	375	3
F01	Astro1	The Astronomical Universe	375	3
S02	Astro504	Extragalactic Astronomy	10	3
F02	Astro120	The Big Bang Universe	34	3
F02	Astro20S	Freshman Seminar	16	2
F03	Astro20S	Freshman Seminar	23	2
S04	Astro504	Extragalactic Astronomy	14	3
F04	Astro20S	Freshman Seminar	26	2
F04	Astro120	The Big Bang Universe	35	3
F05	Astro20S	Freshman Seminar	40	2

Courses Developed and Course Descriptions:

The Big Bang Universe (ASTRO 120): A course emphasizing the latest research developments on the origin of the Universe, the formation and evolution of galaxies and structure, dark matter, and black holes. The course is designed for non-science majors, but is a more in-depth coverage than the large lecture course, ASTRO 1. (Designed and developed course; Taught in Spring 1993, Spring 1994, Spring 1996, Spring 1997, Spring 1999, Fall 1999, Fall 2000, Fall 2002, and Fall 2004)

Freshman Seminar (ASTRO 20): Similar to Astro 120 above, but for astronomy majors. This course also includes discussion of career issues in astronomy. Students interview members of the faculty and students of astronomy at various levels. (Designed and developed course taught in Fall 2003, Fall 2004, and Fall 2005)

- Topics in Theoretical Cosmology (1/2 of ASTRO 505): Graduate class covering quasar absorption lines, growth of structure, dark matter, N-body simulations, cosmic microwave background, inflation, active galaxies. Assignments based on research-based problem solving. (Designed and developed course; Taught in Spring 1995)
- Extragalactic Astronomy (ASTRO 504): Graduate class covering cosmology, Milky Way Galaxy, other galaxies, large-scale structure, dark matter, active galaxies and quasars, early universe, etc. Assignments based on research-based problem solving. (Designed and developed course; Taught in Spring 1998, 2000, 2002, and 2004)
- The Astronomical Universe (ASTRO 1): A non-mathematical survey course for non-majors. (Taught in Fall 1993, Fall 1994, Fall 1995, Fall 1996, Fall 1997, and Spring 2001)
- Independent Studies (ASTRO 296): Research projects for undergraduates. (Designed project and supervised a student in Spring 1994, Fall 1995, and Fall 1997)
- Individual Studies (ASTRO 596): Fall research projects (6 credits) for graduate students. (Supervised four students in Fall 1993, one student in Fall 1997, one student in Fall 2000, and one student in Fall 2003)

Speaking Engagements:

Invited Talks at National and International Conferences:

- “Models of Lyman-alpha Forest Clouds”, ESO/Munich QSO Absorption Lines Workshop, Garching, Germany (November 1994)
- “Probing Lyman-alpha Clouds with Double Lines of Sight”, Institute for Theoretical Physics Workshop on Galaxy Formation and the Intergalactic Medium, Santa Barbara, California (May 1995)
- “Lyman-alpha Absorption from the Extended Disks of Galaxies of Various Sorts”, Space Telescope Science Institute Mini-Workshop on the Physics of the Lyman-alpha Forest Baltimore, Maryland (June 1995)
- “QSO Absorption Line Systems as a Probe of Galaxies Like the Milky Way”, GCD4: History of the Milky Way and its Satellite System, Ringberg, Germany (July 1995)
- “MgII Absorbers: Disks, Halos, Satellites, and Pairs”, IAGUSP Workshop on Young Galaxies and QSO Absorption Line Systems, Santos, Brazil (April 1996)
- “QSO Absorption Lines: the Evolution of Galactic Gas Over Cosmic Time”, (45 minutes), American Astronomical Society Meeting, Toronto, Canada (January 1997)
- “The Intergalactic Medium and Galaxy Evolution at High Redshift”, The Ultraviolet Universe at Low and High Redshift: Probing the Progress of Galaxy Evolution, College Park, Maryland (May 1997)
- “The Distribution of Gas In and Around Galaxies”, 13th IAP Colloquium: Structure and Evolution of the IGM from QSO Absorption Line Systems, Paris, France (July 1997)
- “Panelist on Featured Debate on High Velocity Clouds”, Gas and Galaxy Evolution, Socorro, New Mexico (May 2000)

“The Phase Structure of Weak MgII Absorbers and Star Forming Pockets in Invisible Dwarfs”, Extragalactic Gas at Low Redshift, Pasadena, California (April 2001)

“Studying the Gaseous Phases of Galaxies with Background QSOs”, Hubble Science Legacy, Chicago, Illinois (April 2002)

“Absorption Signatures of the Gaseous Phases of Galaxies”, The IGM/Galaxy Connection, Boulder, Colorado (August 2002)

Contributed Talks at National and International Conferences:

“Kinematic Tests of Exotic Flat Cosmological Models”, Jane C. Charlton and Michael S. Turner, The Early Universe, Vancouver Island, Canada (August 1986)

“Galactic Cannonballs: Angular Momentum Loss and Mass Redistribution in Spiral Galaxies”, Jane C. Charlton and Edwin E. Salpeter, Galaxy Formation, Taos, New Mexico (January 1988)

“Galactic Cannonballs: Angular Momentum Loss and Mass Redistribution in Spiral Galaxies”, Jane C. Charlton and Edwin E. Salpeter, Los Alamos, New Mexico (January 1989)

“The Galactic Merger Rate from Galaxy Pairs in a Combined Redshift Catalog”, Jane C. Charlton and Edwin E. Salpeter, Galaxy Merger Rate Workshop, Baltimore, Maryland (January 1990)

Three Informal Talks on: “Violent Galactic Evolution”, “Dark Matter Around Galaxies”, and “Lyman-alpha Clouds”, Jane C. Charlton, Aspen Summer Workshop on the Physics of Galaxy Formation, Aspen, Colorado (June 1991)

“The Pressure of the Intergalactic Medium”, Jane C. Charlton, Edwin E. Salpeter, and Craig J. Hogan, Aspen Summer Workshop on the Dynamic Interstellar Medium, Aspen, Colorado (June 1993)

Various Comments and Talks, Aspen Winter Physics Workshop on QSO Absorption Lines, Aspen, Colorado (January 1995)

Invited Talks at Universities:

“Distinguishing Between Cosmological Models”, Theoretical Astrophysics Seminar, University of Chicago, Chicago, Illinois (May 1985)

“Can Explosive Galaxy Formation Generate the Observed Large-Scale Structure of the Universe?”, Theoretical Astrophysics Seminar, University of Chicago, Chicago, Illinois (February 1986)

“Cosmic String Wakes and Large Scale Structure”, Theoretical Astrophysics Seminar, University of Chicago, Chicago, Illinois (April 1987)

- “Cosmic String Wakes and Large Scale Structure”, Physics Colloquium, University of Pennsylvania, Philadelphia, Pennsylvania (April 1987)
- “Cosmic String Wakes and Large Scale Structure”, Physics Colloquium, Cornell University, Ithaca, New York (November 1987)
- “Galactic Cannonballs: Angular Momentum Loss and Mass Redistribution in Spiral Galaxies”, Los Alamos Theory Colloquium, Los Alamos, New Mexico (January 1989)
- “Galactic Cannonballs: Sporadic Mass Loss, Spin-down and Element Redistribution in Young Spiral Disks”, Astronomy Seminar, Ohio State University, Columbus, Ohio (January 1989)
- “A Pointwise Fractal Dimension Description of the Large-Scale Structure of Galaxies”, Los Alamos Non-linear Science Colloquium, Los Alamos, New Mexico (February 1989)
- “Galactic Cannonballs: Sporadic Mass Loss, Spin-down and Element Redistribution in Young Spiral Disks”, Lunch Seminar, Space Telescope Science Institute, Baltimore, Maryland (February 1989)
- “Galactic Cannonballs: Sporadic Mass Loss, Spin-down and Element Redistribution in Young Spiral Disks”, Lunch Talk, Theoretical Astrophysics Lunch Seminar, Cornell University, Ithaca, New York (March 1989)
- “Galactic Cannonballs: Sporadic Mass Loss, Spin-down and Element Redistribution in Young Spiral Disks”, Lunch Talk, Theoretical KPNO Lunch Seminar, Tucson, Arizona (October 1989)
- “Pairs of Galaxies in Redshift Catalogs: Galactic Halo Sizes and Merger Rates”, NOAO, KPNO-NSO, Steward Obs., and NRAO Joint Colloquium, Tucson, Arizona (March 1990)
- “Pairs of Galaxies in Redshift Catalogs: Galactic Halo Sizes and Merger Rates”, Astronomy and Astrophysics Dept. Seminar, University of Texas, Austin, Texas (October 1990)
- “Pairs of Galaxies in Redshift Catalogs: Galactic Halo Sizes and Merger Rates”, Astrophysics Seminar, University of Minnesota, Minneapolis, Minnesota (March 1991)
- “Equilibrium Slab Models of Lyman-alpha Clouds”, Weekly Seminar, Institute of Astronomy, Cambridge University, Cambridge, England (May 1991)
- “Dark Matter, Mergers, and Morphology of Galaxies”, Astronomy and Astrophysics Colloquium, Penn. State Univ., University Park, Pennsylvania (May 1991)
- “Dark Matter, Mergers, and Morphology of Galaxies”, Physics and Astronomy Dept. Colloquium, Arizona State University, Phoenix, Arizona (October 1991)
- “Equilibrium Slab Models of Lyman-alpha Clouds”, Astrophysics Lunch Seminar, Arizona State University, Phoenix, Arizona (October 1991)

- “Galaxy Pairs, Mergers, and Morphology”, Astronomy Dept. Colloquium, University of California Santa Cruz, Santa Cruz, California (October 1991)
- “Equilibrium Slab Models of Lyman-alpha Clouds”, Physics Dept. Colloquium, Stanford University, Stanford, California (October 1991)
- “Equilibrium Slab Models of Lyman-alpha Clouds”, Special Astronomy Seminar, University of California Santa Cruz, Santa Cruz, California (November 1991)
- “Equilibrium Slab Models of Lyman-alpha Clouds”, NOAO/KPNO-NSO, Steward Obs., and NRAO Joint Colloquium, University of Arizona, Tucson, Arizona (December 1991)
- “Equilibrium Slab Models of Lyman-alpha Clouds”, Seminar, Space Telescope Science Institute, Baltimore, Maryland (January 1992)
- “Equilibrium Slab Models of Lyman-alpha Clouds”, Physics and Astronomy Dept. Seminar, Michigan State University, Lansing, Michigan (February 1992)
- “Equilibrium Slab Models of Lyman-alpha Clouds”, Physics and Astronomy Dept. Seminar, University of Pittsburgh, Pittsburgh, Pennsylvania (February 1992)
- “Evolution of the Lyman-alpha Forest”, NOAO/KPNO-NSO, Steward Obs., and NRAO Joint Colloquium, Tucson, Arizona (February 1992)
- “Evolution of the Lyman-alpha Forest”, Astronomy and Astrophysics Dept. Seminar, Penn. State Univ., University Park, Pennsylvania (May 1992)
- “Hunting in the Lyman-alpha Forest”, Astrophysics Theory Lunch Seminar, Cornell University, Ithaca, New York (March 1993)
- “Hunting in the Lyman-alpha Forest”, Large-Scale Structure Seminar Series, Carnegie Observatories, Santa Barbara Street, Pasadena, California (March 1993)
- “Hunting in the Lyman-Alpha Forest”, Astrophysics Seminar, Los Alamos, New Mexico (August 1993)
- “Hunting in the Lyman-Alpha Forest: A Measurement of the Pressure of the Intergalactic Medium?”, Astronomy Dept. Colloquium, Northwestern Univ., Evanston, Illinois (April 1994)
- “Hunting in the Lyman-Alpha Forest: A Measurement of the Pressure of the Intergalactic Medium?”, Astronomy Dept. Colloquium, University of Hawaii, Honolulu, Hawaii (May 1994)
- “What Lies Between the Galaxies?”, Clemson University Physics and Astronomy Colloquium, Clemson, South Carolina (October 1994)
- “Galactic Cannonballs”, Clemson University Physics and Astronomy Colloquium, Clemson, South Carolina (October 1994)

- “The Evolution of Galaxies Over Cosmic Time”, Center for Gravitational Physics and Geometry Seminar, Penn. State Univ., Pennsylvania (August 1995)
- “MgII Absorbers: Halos or Disks?”, National Optical Astronomy Observatories Lunch Seminar, Tucson, Arizona (May 1996)
- “The Evolution of Galactic Gas Over Cosmic Time”, Harvard University Center for Astrophysics Colloquium, Boston, Massachusetts (March 1997)
- “The Evolution of Galactic Gas Over Cosmic Time”, Ohio State Dept. of Physics and Astronomy, Columbus, Ohio (April 1997)
- “What Are MgII Absorbers? – Tracing the Evolution of the Gaseous Morphology of Galaxies”, Princeton Astronomy Dept. Colloquium, Princeton, New Jersey (April 1997)
- “From the Interstellar Medium to Quasar Absorption Lines”, University of Wisconsin Dept. of Astronomy Colloquium, Madison, Wisconsin (November 1997)
- “Quasar Absorption Lines and the Evolution of Galaxies”, Columbia University Dept. of Astronomy Colloquium, New York, New York (November 1997)
- “The Evolution of Galactic Gas Over Cosmic Time”, Queens University Dept. of Physics, Ontario, Canada (November 1997)
- “The Evolution of Galactic Gas Over Cosmic Time”, Waterloo University Dept. of Physics, Ontario, Canada (December 1997)
- “The Evolution of Galactic Gas Over Cosmic Time”, McMaster University Dept. of Physics, Ontario, Canada (December 1997)
- “Quasar Absorption Lines and the Evolution of Galaxies”, University of Michigan, Ann Arbor, Michigan (March 1998)
- “Evolution of Galactic Gas Over Cosmic Time”, Indiana University, Indiana, Pennsylvania (April 1998)
- “First Science From the Hobby–Eberly Telescope”, Carnegie–Mellon, Pittsburgh, Pennsylvania (April 1999)
- “Formation of Dwarf Galaxies and Globular Clusters in the Tidal Debris from Galaxy Interactions”, NRAO/Virginia, Charlottesville, Virginia (December 1999)
- “Charting Metal-Rich Gaseous Environments Inside and Outside of Galaxies”, American Museum of Natural History, New York, New York (October 2001)
- “Charting Metal-Rich Gaseous Environments Inside and Outside of Galaxies”, University of California, San Diego, California (November 2001)
- “Charting Metal-Rich Gaseous Environments Inside and Outside of Galaxies”, Cornell University, Ithaca, New York (March 2002)

“Charting Metal-Rich Gaseous Environments Inside and Outside of Galaxies”, Michigan State University, East Lansing, Michigan (March 2002)

“Galaxies and Other Gaseous Structures Through Quasar Absorption Lines”, Space Telescope Science Institute, Baltimore, Maryland (September 2004)

Outreach Talks and Activities:

“A Tour of the Universe”, University Scholars Program (November 1992)

“Hunting in the Forest: The Search for Gas Between the Galaxies”, Fireside Talk at the Nittany Lion, Penn State (July 1993)

Guest Columnist for the Astronomy Club Newsletter (April 1993 and November 1993)

Speaker at Meeting of the National Association for Gifted Children, Atlanta (November 1993)

Parent’s Day Observing at Davey Lab (September 1995 and September 1996)

Speaker at the Aspen Middle School (January 1995)

Tutor for the Science Olympiad for Junior High School Students, State College (April 1995)

Spectroscopy Demonstration for Fourth Graders, State College (October 1995)

“Mysteries of the Hubble Space Telescope” Penn State Astronomy Club (January 1996)

“Mysteries of the Hubble Space Telescope” Society of Physics Students (February 1996)

“Mysteries of the Hubble Space Telescope” Science 400 Seminar (March 1996, February 1997, January 1998, March 2000, April 2001)

“Quasar Absorption Line Systems”, Astro 400H Honors Seminar (March 1996, March 1997, April 1999, February 2001)

Planetarium Demonstration for Fifth Graders Penn State (April 1996)

“Discoveries with the Hubble Space Telescope”, SOARs summer program for high school students (June 1996 and June 1997)

“Black Holes”, Discussion with University Scholars (February 1998)

“Colliding Galaxies”, Talk to the Astronomy Club (April 1998)

“Discoveries with the Hubble Space Telescope”, SOARs summer program for high school students (June 1998)

“Stargazing and Open House”, Parent’s weekend activities, 300 people (September 1998)

Job Shadowing for a 10th grade student (November 1998)

Workshop Organizer at Girl Power Day, Harrisburg (March 1999)

“Galactic Train Wrecks”, Talk to the Astronomy Club (March 1999)

“Astrofest” Coordinator, 1675 people (July 1999)

“Astronight Stargazing and Activities” Coordinator, Parent’s weekend activities, 350 people (September 1999)

“Space Day” Coordinator, Various activities and posters, 300 people (April 2000)

“Astrofest” Coordinator, 1400 people (July 2000)

“Colliding Galaxies” Presentation to high school teacher workshop (July 2000)

“Astronight Stargazing and Activities” Coordinator, Parent’s weekend activities, 400 people (September 2000)

“Galactic Train Wrecks”, Talk to the Astronomy Club (November 2000)

“Galactic Trainwrecks”, Presentation to Gifted 7th-12th Graders (January 2001)

“Brief History of the Universe”, Friedman Outreach Lecture, 250 people (February 2001)

“Space Day” Coordinator, Various activities and posters, 500 people (April 2001)

“Astrofest” Coordinator, 2000 people (July 2001)

“Colliding Galaxies” Presentation to high school teacher workshop (July 2001)

“Astronight Stargazing and Activities” Coordinator, Parent’s weekend activities, 400 people (September 2001)

“Quasars Lighting Our Way Back in Time”, Hayden Planetarium Invited Talk, New York, 250 people (October 2001)

“Brief History of the Universe”, Lecture at Foxdale Retirement Center, 150 people (March 2002)

“Space Day” Coordinator, Various activities and posters, 500 people (April 2002)

“Take Your Daughters to Work Day” Coordinator, Planetarium shows and activities, 50 people (April 2002)

“Astrofest” Coordinator, 1700 people (July 2002)

“Colliding Galaxies”, “Quasar Absorption Lines”, and “Recent Developments in Cosmology” Presentations to high school teacher workshop (July 2002)

“Brief History of the Universe”, Presentation to Central Pennsylvania Observers (August 2002)

“Astronight Stargazing and Activities” Coordinator, Parent’s weekend activities, 500 people (October 2002)

“Take Your Daughters to Work Day” Coordinator, Planetarium shows and activities, 50 people (April 2003)

“Astrofest” Coordinator, 1100 people (July 2003)

“Astronight Stargazing and Activities” Coordinator, Parent’s weekend activities, 300 people (October 2003)

Keynote Speaker for Women’s Science Forum, Space Telescope Science Institute, 50 girls (May 2004)

“Astrofest” Coordinator, 1600 people (July 2004)

“Astronight Stargazing and Activities” Coordinator, Parent’s weekend activities, 120 people (October 2004)

“Galactic Train Wrecks”, author of feature article in Sky and Telescope, with Sarah Gallagher and Chris Palma (November 2004)

Taught several teacher workshop sessions (July 2005)

“Astrofest” Coordinator, 1500 people (July 2005)