

Edmund M. Douglass

Department of Physics
Farmingdale State College (SUNY)
2350 Broadhollow Rd.
Farmingdale, NY 11735

phone: 934 - 420 - 2220
office: 109 Memorial Hall
douglae@farmingdale.edu
emdouglass.org

Current Positions

2017 - present	Chairperson Department of Science, Technology, & Society Farmingdale State College Farmingdale, NY
2021 - present	Associate Professor of Physics Department of Physics Farmingdale State College Farmingdale, NY
2016 - present	Visiting Scientist Department of Astrophysics American Museum of Natural History New York, NY

Previous Positions

2014 - 2021	Assistant Professor of Physics Department of Physics Farmingdale State College Farmingdale, NY
2011 - 2013	Post-Doctoral Teaching Fellow School of Sciences and Engineering American University in Cairo Cairo, Egypt
2005 - 2011	Graduate Research Assistant Department of Astronomy Boston University Boston, MA

Education

2012	Ph.D.	Astronomy, Boston University, Boston, MA
2003	B.S.	Physics and Astronomy, University of Pittsburgh, Pittsburgh, PA

Research Interests

- High Energy Astrophysics
- Galaxy Cluster Formation and Evolution
- Non-Cool Core Formation
- Gas Sloshing and Cool Core Disruption
- Dynamical Studies of Galaxy Clusters
- Active Galactic Nuclei Feedback
- Wide Angle Tail Radio Sources
- X-ray, Optical, & Radio Observations

Teaching Experience (*course includes laboratory component)

2014 - 2021	Physics 136*	<i>College Physics II</i>	Farmingdale State College
2019 - 2020	Physics 118	<i>Stellar Astronomy</i>	Farmingdale State College
2017 - 2019	Physics 480	<i>Physics Research I</i>	Farmingdale State College
2015 - 2021	Physics 117	<i>Solar System Astronomy</i>	Farmingdale State College
2015 - 2021	Physics 121	<i>Descriptive Classical Phys.</i>	Farmingdale State College
2014 - 2018	Physics 135*	<i>College Physics I</i>	Farmingdale State College
2014	Astronomy 101	<i>Astronomy</i>	Marymount University
2014	Astronomy 161*	<i>General Astronomy</i>	Towson University
2011 - 2013	Science 120 Physics 123*	<i>Scientific Thinking</i> <i>General Physics Lab</i>	American University in Cairo American University in Cairo
2012	Physics 112	<i>Electricity & Magnetism</i>	American University in Cairo
2012	Physics 312	<i>Theoretical Mechanics</i>	American University in Cairo
2008	Astronomy 117*	<i>Cosmic Evolution</i>	Boston University (Teaching Fellow)
2003 - 2005	Astronomy 101*	<i>The Solar System</i>	Boston University (Teaching Fellow)

Student Mentoring

2020 - 2021	<u>Joseph Ogden</u> - Farmingdale State College, Computer Systems Student
2020 - 2021	<u>Matthew Klein</u> - Rochester Institute of Technology, Comp. Prog. Student
2018 - 2019	<u>Berkay Ekici</u> - Farmingdale State College, Mechanical Eng. Student
2017 - 2018	<u>Safiuallah Gardezy</u> - Farmingdale State College, STS Student
2017 - 2018	<u>Maxine Harris</u> - Farmingdale State College, STS Student
2016 - 2018	<u>Bazit Bisiolu</u> - Farmingdale State College, Mechanical Eng. Student, research project on X-ray substructure in galaxy clusters
2016 - 2017	<u>Esteban Idrovo</u> - Amityville High School, Radio Studies of Clusters
2016 - 2017	<u>Lawrence Haave</u> - Amityville High School, X-ray Studies of Clusters
2016 - 2018	<u>Matthew Klein</u> - Amityville High School, X-ray Studies of Clusters
2015 - 2018	<u>Ziad Sabry</u> - Lindenhurst High School, research project examining the dynamical state of Abell clusters hosting double lobed radio sources
2015 - 2016	<u>Elizabeth Jose</u> - Sacred Heart Academy, summer research project assembling a catalog of massive clusters hosting extended radio sources
2015	<u>Sarah Shahid</u> - Farmingdale State College, summer research project combining optical, radio, and X-ray observations of galaxy clusters

Professional Memberships

2005 - pres.	American Astronomical Society
2006 - pres.	High Energy Astrophysics Division, AAS

Externally Funded Grants (as PI)

2017 Chandra X-ray Observatory - Cycle 19 - *Abell 1763: Giant Gas Sloshing Spiral But No Cool Core* (76 ksec of observing time) PI: E. M. Douglass, Co-Is: E. L. Blanton, T. E. Clarke, S.W. Randall, L.O.V. Edwards, Z. Sabry \$62,102

Additional Awarded Observing Proposals (as Co-I)

2019 Joint Chandra/HST Observation
Chandra X-ray Observatory - Cycle 21 - *A $z=1.8$ Cluster in the Clusters Occupied by Bent Radio AGN (COBRA) Survey*
(100 ksec of observing time)
Hubble Space Telescope - Cycle 27 (2 orbits)
PI: E. L. Blanton, Co-Is: M. Ashby, E. M. Douglass, E. Golden-Marx, R. Paterno-Mahler, S. W. Randall, J. S. Wing

2015 Chandra X-ray Observatory - Cycle 16 - *Bending of WAT Radio Lobes in Abell 623 Through ICM Sloshing* (31 ksec of observing time) PI; E. L. Blanton, Co-Is R. Paterno-Maler, T. E. Clarke, S. W. Randall, E. M. Douglass, E. Golden-Marx, J. S. Wing

Other Professional Activities

2017 Chandra X-ray Telescope | Cycle 19
Peer Review Time Allocation Committee

Previous Research Experience

2005-2011	Graduate Research Assistant <i>Cluster Environment of Wide Angle Tail Radio Sources</i> Advisor: Elizabeth Blanton Boston University, Institute for Astrophysical Research
2004-2005	Graduate Research Assistant <i>Stellar Occultations of Planetary Rings</i> Advisor: Amanda Bosh Lowell Observatory/Boston University
2002-2003	Undergraduate Research and Development Assistant <i>ATLAS Detector, LHC at Cern</i> Advisor: Vladimir Savinov University of Pittsburgh, Department of Physics

First Author Publications

- (1.) *The Megaparsec Scale Gas Sloshing Spiral in the Remnant Cool Core Cluster Abell 1763*
E. M. Douglass, E. L. Blanton, Scott W. Randall, T. E. Clarke, L.O.V. Edwards, Z. Sabry, 2018, ApJ, 868, 121
- (2.) *The Merger Environment of the Wide Angle Tail Hosting Cluster Abell 562*
E. M. Douglass, E. L. Blanton, T. E. Clarke, Scott W. Randall, Joshua D. Wing, 2011, ApJ, 743, 199
- (3.) *Chandra Observation of the Cluster Environment of a WAT Radio Source in Abell 1446*
E. M. Douglass, E. L. Blanton, T. E. Clarke, Craig L. Sarazin, and Michael Wise, 2008, ApJ, 673, 763

Other Refereed Papers

- (4.) *A Very Deep Chandra Observation of A2052: Bubbles, Shocks, and Sloshing*
E. L. Blanton, S. W. Randall, T. E. Clarke, C. L. Sarazin, B. R. McNamara, E. M. Douglass, M. McDonald, 2011, ApJ, 737, 99
- (5.) *Shocks and Bubbles in a Deep Chandra Observation of the Cooling Flow Cluster Abell 2052*
E. L. Blanton, S. W. Randall, E. M. Douglass, C. L. Sarazin, T. E. Clarke, B. R. McNamara, 2009, ApJ, 697, L95
Tracing Multiple Generations of AGN Feedback in the Core of Abell 262
- (6.) T. E. Clarke, E.L. Blanton, C. L. Sarazin, L. D. Anderson, Gopal-Krishna, E. M. Douglass, Namir E. Kassim 2009, ApJ, 697, 1481

Selected Conferences and Conference Proceedings

Cool Core Disruption Via High Angular Momentum Subcluster Infall

E. M. Douglass, S. W. Randall, E. L. Blanton, T. E. Clarke, L.O.V. Edwards, Z. Sabry
235th Meeting of the American Astronomical Society, Honolulu, HI, 2020

Off- Axis Mergers and Cool Core Disruption

E. M. Douglass, Z. Sabry, S.W. Randall, E.L. Blanton, T. E. Clarke, L.O.V. Edwards,
20 Years of Chandra Science Symposium, Boston, Ma, 2019

The Disrupted Cool Core in Abell 1763

E. M. Douglass, Elizabeth L. Blanton, Scott W. Randall, T. E. Clarke, L.O.V. Edwards, Z. Sabry
229th Meeting of the American Astronomical Society, Grapevine, TX, 2017

The Galaxy Cluster Environments of Wide Angle Tail Radio Sources

E. M. Douglass, Elizabeth L. Blanton, Scott W. Randall, T. E. Clarke, Joshua Wing
227th Meeting of the American Astronomical Society, Kissimmee FL, 2016

Extragalactic Jets As Probes of Distant Clusters of Galaxies and the Clusters Occupied By Bent Radio AGN (COBRA) Survey

Blanton, Elizabeth L.; Paterno-Mahler, Rachel; Wing, Joshua D.; Ashby, M. L. N.; Golden-Marx, Emmet;
Brodwin, Mark; Douglass, E. M.; Randall, Scott W.; Clarke, T. E.
Extragalactic jets from every angle, Proceedings of the International Astronomical Union, IAU Symposium,
Volume 313, pp. 315-320

AGN in Clusters of Galaxies: Feedback, Sloshing, and Lobe Bending

E. L. Blanton, S. W. Randall, T. E. Clarke, C. Sarazin, B. McNamara, E. M. Douglass, J. Wing, R.
PaternoMahler, M. Brodwin, M. Ashby
Presented at Half a Century of X-ray Astronomy, Mykonos Island, Greece, 2012

The Galaxy Cluster Environment of Wide Angle Tail Radio Sources

E. M. Douglass, E. L. Blanton, T. E. Clarke, S. W. Randall
Presented at Structure in Clusters & Groups of Galaxies in the Chandra Era, Boston, Ma, 2011
Presented at the 218th Meeting of the American Astronomical Society, Boston, Ma, 2011

The Cluster Environment of Wide Angle Tail Radio Sources

E. M. Douglass, E. L. Blanton, T. E. Clarke, C. L. Sarazin, M. Wise
Presented at Chandra's First Decade of Discovery, Boston, Ma, 2009
Presented at Radio Galaxies in the Chandra Era Cambridge, Ma, 2008

X-ray Properties of Clusters with Wide Angle Tail Radio Galaxies: Abell 562 & Abell 1446

E. M. Douglass, E. L. Blanton, T. E. Clarke, C. L. Sarazin, M. Wise
Presented at Eight Years of Science with Chandra, Huntsville, Al, 2007

Observations of the Cluster Environment of a WAT Radios Source in Abell 1446

E. M. Douglass, E. L. Blanton, T. E. Clarke, C. L. Sarazin, M. Wise
Presented at the 209th Meeting of the American Astronomical Society, Seattle, Wa 2007 *A Method for*

Stellar Occultation Data Analysis

E. M. Douglass, A. S. Bosh, S. Hylton
Presented at 36th Meeting of the AAS Division of Planetary Sciences, Louisville, Ky 2004

Astrophysics/Physics Workshops Attended

- 2016 *Methods of Scientific Research: Readyng Undergraduates for Research Experiences*,
American Museum of Natural History, New York, NY
- 2015 *The Universe in High Resolution X-Ray Spectra*, Center for Astrophysics, Cambridge, MA
- 2015 *11th Annual Synthesis Imaging Workshop*, National Radio Astronomy Observatory, Socorro,
New Mexico 2006
- 2008 *4th International X-ray Astronomy School*, Center for Astrophysics, Cambridge, MA
- 2006

Selected Research Talks, Guest Lectures, and Outreach

- 2018 *Off-Axis Mergers, Gas Sloshing Spirals, and Cool Core Disruption in Galaxy Clusters*, NYU, New
York, NY
- 2016 *Cool Core Disruption in Galaxy Clusters: The Case of Abell 1763* – Astrophysics Department at the
American Museum of Natural History, New York, NY

2016	<i>The Physics of Amusement Parks</i> – P-TECH Program, Farmingdale, NY
2016	<i>Earthlings in Search of Extraterrestrial Intelligence</i> – Invited Lecture, Institute for Learning in Retirement, Farmingdale State College, Farmingdale, NY
2015	<i>X-rays and Radio Waves from the Outskirts of the Universe</i> , Farmingdale University Club, Farmingdale, NY
2015	<i>Galaxy Clusters and Supermassive Black Holes</i> – STEM High School Summer Program, Farmingdale State College, Farmingdale, NY
2015	<i>X-rays, Radio Waves, and Galaxy Clusters</i> – Invited Lecture, Institute for Learning in Retirement, Farmingdale State College, Farmingdale, NY
2015	<i>A History of Space Exploration</i> – Workshop at STEM/STEAM Diversity Summit Farmingdale State College, Farmingdale, NY
2014	<i>Understanding Galaxy Cluster Environments using X-Rays and Radio Waves</i> – Physics Department Colloquium, Farmingdale State College, Farmingdale, NY
2014	<i>The Cluster Environment of Wide Angle Tail Radio Galaxies</i> – Invited colloquium talk at Naval Research Laboratory, Washington, D.C.
2013	<i>The State of the Art in the Search for Extraterrestrial Life</i> – Invited seminar at the American University in Cairo, Biology Department
2011-2013	<i>Our Cosmic Neighborhood</i> – General Lecture to 750 students in attendance, American University in Cairo
2013	<i>Our Solar System</i> – Cairo British School (5 - 10 year olds), Giza, Egypt
2012	<i>What is String Theory?</i> – Invited lecturer, AUC School of Science and Engineering

Technical Skills

- Extensive experience with large astronomical datasets (*Chandra* X-ray Observatory Archive, XMM-Newton, Sloan Digital Sky Survey, FIRST Radio Survey, etc.)
- Highly proficient with *Chandra* X-ray data and analysis software (CIAO)
- *Chandra* ACIS imaging spectroscopy analysis (Xspec)
- VLA radio continuum data reduction and analysis (CASA)
- Python,IDL, FORTRAN, Mathematica, Tcl, Office
- Observing experience with 0.41m, 1.8m, and 4.0m research-grade telescopes
- Operational expertise with 44-seat Towson Univ. Watson-King Planetarium

Selected Service Highlights at Farmingdale State College

CAMPUS-WIDE

2021	Center for Teaching, Learning, & Technology Award Committee
2020 - 2021	Enrollment Management Working Group
2019	Arts & Sciences Assistant Dean Search Committee Chair
2018	Amazon Challenge Organizing Committee
2017 - 2018	Provost's Curriculum Task Force
2015 - 2018	Member of College Wide Curriculum Committee
2015	Fulbright Scholarship Committee Member
2015 - pres.	Title IX Grievance Resolution Pool Member
2015 - 2016	Academic Orientation Leader

DEPARTMENTAL: Physics

2014 - pres. Applied Physics Major - Development Committee
2014 - pres. Open House Physics Department Representative
2016 New Physics Faculty Search: Committee Member

DEPARTMENTAL: Science, Technology, & Society

2017 - pres. Chairperson
2017- pres. Led effort to redesign and implement new curriculum
2017 Staff Assistant Search: Committee Chair
2016 Summer Chair of STS Department
2014 - pres. Academic Advisor