

**John Evangelos Gizis**  
**Professor**  
**University of Delaware**  
**C.V.**

**Contact Information**

- Mail: 217 Sharp Lab, University of Delaware, Newark DE 19716, USA
- Phone: 1-302-831-2668
- Fax: 1-302-831-1637
- E-mail: gizis@udel.edu

**Education**

- B.S. Astronomy & Physics, Yale University, 1992
- Ph.D. Astronomy, California Institute of Technology, 1998

**Experience**

- Professor, Department of Physics and Astronomy, University of Delaware, 2014-present
- Associate Professor, Department of Physics and Astronomy, University of Delaware, 2007-2014
- Assistant Professor, Department of Physics and Astronomy, University of Delaware, 2001-2007
- Assistant Research Scientist, Infrared Processing and Analysis Center (IPAC), California Institute of Technology, 2000-2001
- Postdoctoral Research Associate, Department of Physics and Astronomy, University of Massachusetts at Amherst, 1997-1999

**Professional Organizations**

- International Astronomical Union (IAU)
- American Astronomical Society (AAS)
- American Association of University Professors (AAUP)
- American Association of Physics Teachers (AAPT)
- Academic Data Science Alliance (ADSA)

**Honors and Awards**

- Visiting Scholar, California Institute of Technology, 2008-9

- The Maria and Eric Muhlmann Award (2006) for Mike Skrutskie and the 2MASS Team
- NASA Group Achievement Award for the 2MASS Team (2000)
- Greenstein Graduate Fellowship (Caltech Astronomy)
- Kingsley Graduate Fellowship (Caltech Astronomy)

### **Selected Service Experience**

#### *International Science Collaborations*

- Co-Chair, *LSST Stars, Milky Way, and Local Volume Science Collaboration*, 2015-2022

#### *Conference Chair*

- Brown Dwarfs to Exoplanet Connection Conference , 2014, Newark DE
- Brown Dwarfs to Exoplanet Connection Conference , 2017, Newark DE
- Brown Dwarfs to Exoplanet Connection Conference , 2019, Newark DE
- LSST TVS-SMWLV Workshop and Hackathon (co-organizer with F. Bianco), 2019, Newark DE

#### *Grant and Telescope Panels*

- Vice Chair, *Hubble Space Telescope*, 2022
- Deputy Chair, *Chandra X-Ray Telescope, Cycle 23 Stars Panel*, 2021
- Member, *Las Cumbres Observatory Time Allocation Committee*, 2020
- Member, *NASA Keck Galactic Panel*, 2008-2011 (Chair 2011), 2021-
- Member, *NASA ADAP review*, 2012, 2020
- Reviewer, *Spitzer Space Telescope, Cycle 14 and DDT*, 2018-2019
- Member, *Chandra X-Ray Telescope, Cycle 18 Galactic Panel*, 2016
- Member, *National Optical Astronomical Observatories, Galactic Time Allocation Committee*, 2000-2002, 2012-2014
- Chair, *Spitzer Space Telescope Galactic Panel*, 2013
- Member, *National Science Foundation, Grant Panel*, 2005, 2012, 2013, 2014, 2015, 2016
- Member, *NASA OSS review*, 2013
- Associate Chair, *Spitzer Space Telescope, Cycle 6 Galactic Panel*, 2009
- Member, *Spitzer Space Telescope, Time Allocation Committee*, 2009
- Deputy Chair, *Chandra X-Ray Telescope, Cycle 10 Galactic Panel*, 2008
- Member, *Hubble Space Telescope, Cycle 16 Galactic Panel*, 2007
- Chair, *Spitzer Space Telescope, Cycle 3 Galactic Panel*, 2006
- Member, *Spitzer Space Telescope, Time Allocation Committee*, 2006

- Member, *FUSE, Cycle 8 Cool Stars Panel*, 2006
- Member, *Hubble Space Telescope, Cycle 14 Galactic Panel*, 2005
- Member, *Spitzer Space Telescope, Cycle 2 Galactic Panel*, 2005
- Member, *FUSE, Cycle 7 Hot Stars Panel*, 2005
- Member, *Chandra X-Ray Telescope, Cycle 5 Galactic Panel*, 2003

#### *Advisory Panels*

- Alternate, LSST In-Kind International Contributions Evaluation Committee, 2020-2021, 2021-2022
- Member, *WISE Release Panel Review*, 2012
- Member, *Spitzer Users Panel*, 2007-2012
- Member, *Spitzer Source List Review Panel*, 2009, 2011

#### *Other Selected Service (National and State)*

- Board of Trustees, Mt Cuba Astronomical Observatory, 2018-present
- AAS Committee on Astronomy and Public Policy, 2018-present
- WFIRST Advocacy Day (Congressional Visits), 2019, 2020
- State of Delaware 9<sup>th</sup> Grade Physics Curriculum Committee, 2007-2008
- AAS Congressional Visits Day, 2010

#### *UD Data Science Institute Service*

- Associate Director, UD Data Science Institute (DSI), 2020-present
- UD DSI Faculty Council, 2018-present
- Co-Chair, DSI Networking and External Relations Working Group, 2018+
- UD Data Science Symposiums, White Paper, Cluster Search Committees

#### *Other Selected UD Service*

- President, College of Arts and Sciences (CAS) Faculty Senate, 2022-2023
- Secretary, CAS Faculty Senate, 2017-2020
- AAUP Local Steering Committee, 2018-present
- Taught Astronomy (w/ V. Petit) at Delaware Teachers Institute, 2018
- University General Education Committee, 2011-2012, 2014-2017
- Chair, College (CAS) Promotion & Tenure Committee, 2016-2017
- College (CAS) Promotion & Tenure Committee, 2007-8, 2009-11, 2015-2017
- Chair, Department Promotion & Tenure Committee, 2018-present

- Member, Department Chair Search Committee, 2012
- Convener, Department Executive Committee, 2010-2012, 2016-2017 (member 2009-2012, 2014-2017)
- Director of Undergraduate Program, Department of Physics and Astronomy, 2004-2006

## Publications

### Peer-Reviewed Journals

(U.D. students and postdocs are underlined>

131. *JWST/NIRCam discovery of the first Y+Y brown dwarf binary: WISE J033605.05-014350.4*

Caliendorff, P., et al. 2023, ApJL, in press

130. *Deep drilling in the time domain with DECam: survey characterization*

Graham, M., et al. 2023, MNRAS, 519, 3881

129. *Young Stellar Objects, Accretion Disks, and Their Variability with Rubin Observatory LSST*

Bonito, R., et al. 2023, ApJS, 265, 27

128. *Early Release Science of the exoplanet WASP-39b with JWST NIRCam*

Ahrer, et al., 2023, Nature, 614, 653

127. *Identification of carbon dioxide in an exoplanet atmosphere*

Alderson, L., et al. 2023, Nature, 614, 649

126. *LSST Survey Strategies and Brown Dwarf Parallaxes*

Gizis, J. E., Yoachim, P., Jones, R. L., Hilligoss, D., Ji, J. 2022, ApJS, 263, 23

125. *Optimization of the Observing Cadence for the Rubin Observatory Legacy Survey of Space and Time: A Pioneering Process of Community-focused Experimental Design*

Bianco, F. B., et al. 2022, ApJS, 258, 1

124. *Let the Great World Spin: Revealing the Stormy, Turbulent Nature of Young Giant Exoplanet Analogs with the Spitzer Space Telescope*  
Vos, J. M., et al. 2022, ApJ, 924, 68
123. *Simultaneous Multiwavelength Flare Observations of EV Lacertae*  
Paudel, R.R., Barclay, T., Schlieder, J.E., et al. 2021, ApJ, 922, 31
122. *M-Subdwarf Research II: Atmospheric Parameters and Kinematics*  
Zhang, S. et al. 2021, ApJ, 908, 131
121. *Herschel Observations of Disks Around Late-Type Stars*  
Tanner, A., et al. 2020, PASP, 132, 4401
120. *A Gaussian Process Regression Reveals No Evidence for Planets Orbiting Kapteyn's Star*  
Bortle, A., Fausey, H., Ji, J., Dodson-Robinson, S., Gizis, J., ApJ, in press
119. *K2 Ultracool Dwarfs Survey. VI. White light superflares observed on an L5 dwarf and flare rates of L dwarfs*  
Paudel, R. R., Gizis, J.E., Mullan, D.J., Schmidt, S.J., Burgasser, A.J., Williams, P.K.G., 2020, MNRAS, 494, 575
118. *3.8um Imaging of 400-600K Brown Dwarfs and Orbital Constraints for WISEP J045853.90+643452.6AB*  
Leggett, S. K., et al., 2019, ApJ, 882, 117
117. *2MASS J10274572+0629104: the very short period young M6 dwarf binary system identified in K2 data*  
Paudel, R.R., Gizis, J.E., Burgasser, A.J., Hsu, C. 2019, MNRAS, 486, 4144
116. *K2 Ultracool Dwarfs Survey - V. High superflare rates on rapidly rotating late-M dwarfs*  
Paudel, R.R., et al. 2019, MNRAS, 486, 1
115. *The Elusive Majority of Young Moving Groups. I. Young Binaries and Lithium-rich Stars in the Solar Neighborhood*  
Bowler, B.P., et al. 2019, ApJ, 877, 60
114. *M-Subdwarf Research. I. Identification, Modified Classification System, and Sample Construction*  
Zhang, S. et al. 2019, ApJS, 240, 31
113. *The Transiting Exoplanet Community Early Release Science Program for JWST*  
Bean, J. L., et al. 2018, PASP, 130, 993

112. *An explanation for the gap in the Gaia HRD for M dwarfs*  
MacDonald, J., Gizis, J. 2018, MNRAS, 480, 2
111. *K2 Ultracool Dwarfs Survey. IV. Monster Flares Observed on the Young Brown Dwarf CFHT-BD-Tau 4*  
Paudel, R.R., et al. 2018, ApJ, 861, 76
110. *K2 Ultracool Dwarfs Survey. III. White Light Flares Are Ubiquitous in M6-L0 Dwarfs*  
Paudel, R. R., et al. 2018, ApJ, 858, 55
109. *Spectral Variability of Two Rapidly Rotating Brown Dwarfs: 2MASS J08354256-0819237 and 2MASS J18212815+1414010*  
Schlawin, E., Burgasser, A. J., Karalidi, T., Gizis, J. E. Teske, J. 2007, ApJ, 849, 163
108. *K2 Ultracool Dwarfs Survey II., The White Light Flare Rate of Young Brown Dwarfs*  
Gizis, J.E., et al. 2017, ApJ, 845, 33
107. *Time Series Analysis of Broadband Photometry of Neptune from K2*  
Rowe, J. F., et al. 2017, AJ, 153, 149
106. *K2 Ultracool Dwarfs Survey I. Photometry of an L Dwarf Superflare*  
Gizis, J.E., et al. 2017, ApJ, 838, 22
105. *Variable and polarized radio emission from the T6 brown dwarf WISEP J112254.73+255021.5*  
Williams, P.K.G., Gizis, J.E., Berger, E. 2017, ApJ, 834, 117
104. *Spitzer Space Telescope Mid-IR Light Curves of Neptune*  
Stauffer, J.R., Marley, M.S., Gizis, J.E., Rebull, L.M., Carey, S.J., Krick, J., Ingalls, J.G., Lowrance, P., Glaccum, W., Kirkpatrick, J.D., Simon, A.A., Wong, M.H. 2016, AJ, 152, 142
103. *Observed Variability at 1um and 4um in the Y0 Brown Dwarf WISEP J173835.52+273258.9*  
Leggett, S.K., Cushing, M.C., Hardegree-Ullman, K.K., Trucks, J.L., Marley, M.S., Morley, C.V., Saumon, D., Carey, S.J., Fortney, J.J., Gelino, C.R., Gizis, J.E., Kirkpatrick, J.D., Mace, G.N. 2016, ApJ, 830, 141
102. *WISEP J060738.65+242953.4: A Nearby. Pole-On L8 Brown Dwarf with Radio Emission*  
Gizis, J.E., Williams, P.K.G., Burgasser, A.J., Libralato, M., Nardiello, D., Piotto, G., Bedin, L.R., Berger, E., Paudel, R. 2016, AJ, 152, 123

101. *Transiting Exoplanet Studies and Community Targets for JWST's Early Release Science Program*

Stevenson, K.B., Lewis, N.K., Bean, J.L., Beichman, C., Fraine, J., Kilpatrick, B.M., Krick, J.E., Lothringer, J.D., Mandell, A.M., Valenti, J.A., Agol, E., Angerhausen, D., Barstow, J.K., Birkmann, S.M., Burrows, A., Charbonneau, D., Cowan, N.B., Crouzet, N., Cubillos, P.E., Curry, S.M., Dalba, P.A., de Wit, J., Deming, D., Désert, J.-M., Doyon, R., Dragomir, D., Ehrenreich, D., Fortney, J.J., García Muñoz, A., Gibson, N.P., Gizis, J.E., Greene, T.P., Harrington, J., Heng, K., Kataria, T., Kempton, E.M.-R., Knutson, H., Kreidberg, L., Lafrenière, D., Lagage, P.-O., Line, M.R., Lopez-Morales, M., Madhusudhan, N., Morley, C.V., Rocchetto, M., Schlawin, E., Shkolnik, E.L., Shporer, A., Sing, D.K., Todorov, K.O., Tucker, G.S., Wakeford, H.R. 2016, *PASP*, 128, 967

100. *The First Detection of Photometric Variability in a Y Dwarf: WISE J140518.39+553421.3*

Cushing, M.C., Hardegree-Ullman, K.K., Trucks, J.L., Morley, C.V., Gizis, J.E., Marley, M.S., Fortney, J.J., Kirkpatrick, J.D., Gelino, C.R., Mace, G.N., Carey, S.J. 2016, *ApJ*, 823, 152

99. *Neptune's Dynamic Atmosphere from Kepler K2 Observations: Implications for Brown Dwarf Light Curve Analyses*

Simon, A.A., Rowe, J.F., Gaulme, P., Hammel, H.B., Casewell, S.L., Fortney, J.J., Gizis, J.E., Lissauer, J.J., Morales-Juberias, R., Orton, G.S., Wong, M. H., Marley, M.S. 2016, *ApJ*, 817, 162

98. *Discovery of an L48 Candidate Member of Argus in the Planetary Mass Regime: WISE J231921.92+764544.4*

Castro, P.J., Gizis, J.E., 2016, *ApJ*, 816, 78

97. *M dwarfs and the fraction of high carbon-to-oxygen stars in the solar neighbourhood*

Gizis, J.E., Marks, Z., Hauschildt, P.H. 2016, *MNRAS*, 455, 3824

96. *Properties of the nearby Brown Dwarf WISEP J180026.60+013453.1*

Gizis, J.E., Burgasser, A.J., Vrba, F.J. 2015, *AJ*, 150, 179

95. *Kepler Monitoring of an L Dwarf. II. Clouds with Multi-year Lifetimes*

Gizis, J.E., Dettman, K.G., Burgasser, A.J., Camnasio, S., Alam, M., Filippazzo, J.C., Cruz, K.L., Metchev, S., Berger, E., Williams, P.K.G. 2015, *ApJ*, 813, 104

94. *BANYAN. VII. A New Population of Young Substellar Candidate Members of Nearby Moving Groups from the BASS Survey*

Gagné, J, et al. 2015, *ApJ*, 219, 33

93. *WISEP J004701.06+680352.1: An Intermediate Surface Gravity, Dusty Brown Dwarf in the AB Dor Moving Group*

Gizis, J.E., Allers, K.N., Liu, M.C., Harris, H.C., Faherty, J.K., Burgasser, A.J., Kirkpatrick, J.D. 2015, ApJ, 799, 203

92. *M dwarf search for pulsations within Kepler Guest Observer programme*  
Rodríguez-López, C., Gizis, J.E., MacDonald, J., Amado, P.J., Carosso, A. 2015, MNRAS, 446, 2613

91. *SpeX Spectroscopy of Unresolved Very Low Mass Binaries. II. Identification of 14 Candidate Binaries with Late-M/Early-L and T Dwarf Components*  
Bardalez Gagliuffi, D.C., Burgasser, A.J., Gelino, C.R., Looper, D. L., Nicholls, C.P., Schmidt, S.J., Cruz, K., West, A.A., Gizis, J.E., Metchev, S. 2014, ApJ, 794, 143

90. *Discovery Of Four High Proper Motion L Dwarfs, Including A 10 Pc L Dwarf At The L/T Transition*  
Castro, P.J., Gizis, J.E., Harris, H.C., Mace, G.N., Kirkpatrick, J.D., McLean, I.S., Pattarakijwanich, P., Skrutskie, M.. 2013, ApJ, *accepted*

89. *Kepler Monitoring of an L Dwarf I. The Photometric Period and White Light Flares*  
Gizis, J.E., Burgasser, A.J., Berger, E., Williams, P.K.G., Vrba, F.J., Cruz, K.L., Metchev, S. 2013, ApJ, *submitted*

88. *A Multiplicity Census of Intermediate-mass Stars in Scorpius-Centaurus*  
Janson, M., Lafrenière, D., Jayawardhana, R., Bonavita, M., Girard, J. H., Brandeker, A. Gizis, J. E. 2013, ApJ, 773, 170

87. *Herschel PACS and SPIRE observations of TW Hydrae association brown dwarf disks*  
Riaz, B., & Gizis, J.E. 2012, A&A, 548, 54

86. *New Brown Dwarf Companions to Young Stars in Scorpius-Centaurus*  
Janson, M., Jayawardhana, R., Girard, J.H., Lafrenière, D., Bonavita, M, Gizis, J., Brandeker, A. 2012, ApJ, 758, L2

85. *Discovery of an Unusually Red L-type Brown Dwarf*  
Gizis, J.E., Faherty, J.K., Liu, M.C., Castro, P.J., Shaw, J.D., Vrba, F.J., Harris, H.C., Aller, K.M., & Deacon, N. R. 2012, AJ, 144, 94

84. *Herschel SPIRE observations of the TWA brown dwarf disc 2MASSW J1207334-393254*  
Riaz, B., Lodato, G., Stamatellos, D., & Gizis, J.E. 2012, MNRAS, 422, L6

83. *Discovery of a Late L Dwarf: WISEP J060738.65+242953.4*  
Castro, P.J., & Gizis, J.E. 2012, ApJ, 746, 3

82. *WISEP J180026.60+013453.1:A Nearby Late L Dwarf Near the Galactic Plane*



Gizis, J.E., Burgasser, A.J., Faherty, J.K., Castro, P.J., & Shara, M.M. 2011, AJ, 142, 171

81. *A Very High Proper Motion Star and the First L Dwarf in the Kepler Field*

Gizis, J.E., Troup, N.W., & Burgasser, A.J. 2011, ApJ, 736, L34

80. *A Chandra Observation of the TW Hydrae Association Brown Dwarf 2MASSW J1139511-315921*

Castro, P.J., Gizis, J.E., & Gagné, M. 2011, ApJ, 736, 67

79. *Hubble Space Telescope Imaging and Spectral Analysis of Two Brown Dwarf Binaries at the L Dwarf/T Dwarf Boundary*

Burgasser, A.J., Bardalez Gagliuffi, D.C., & Gizis, J.E. 2011, AJ, 141, 70

78. *Simultaneous Multi-Wavelength Observations of Magnetic Activity in Ultracool Dwarfs. III. X-ray, Radio, and H $\alpha$  Activity Trends in M and L dwarfs*

Berger, E., et al. 2010, ApJ, 709, 332

77. *Brown Dwarf Disks at Ages of 5-10 Myr*

Riaz, B., Lodieu, N., Gizis, J.E., 2009, ApJ, 705, 1173

76. *Periodic Radio and H-alpha Emission from the L Dwarf Binary 2MASSW*

*J0746425+200032: Exploring the Magnetic Field Topology and Radius of an L Dwarf*

Berger, E., Rutledge, R. E., Phan-Bao, N., Basri, G., Giampapa, M. S., Gizis, J. E., Liebert, J., Martin, E., Fleming, T. A. 2009, ApJ, 695, 310

75. *New Brown Dwarf Disks in the TW Hydrae Association*

Riaz, B. & Gizis, J.E. 2008, ApJ, 681, 1584

74. *Hubble Space Telescope Search for M Subdwarf Binaries*

Riaz, B., Gizis, J.E., Samaddar, D. 2008, ApJ, 672, 1153

73. *The Trigonometric Parallax of the Brown Dwarf Planetary System 2MASSW*

*J1207334-393254*

Gizis, J.E., Jao, Wei-Chun, J., Subasavage, J.P., & Henry, T.J. 2007, ApJ, 669, L45

72. *Simultaneous Multiwavelength Observations of Magnetic Activity in Ultracool*

*Dwarfs. II. Mixed Trends in VB 10 and LSR 1835+32 and the Possible Role of Rotation*

Berger, E., Basri, G., Gizis, J.E., Giampapa, M.S., Rutledge, R.E., Liebert, J., Martin, E., Fleming, T.A., Johns-Krull, C.M., Phan-Bao, N., Sherry, W.H. 2008, ApJ, 676, 1307

71. *Simultaneous Multi-Wavelength Observations of Magnetic Activity in Ultracool Dwarfs. I. The Complex Behavior of the M8.5 Dwarf TVLM513-46546.*

Berger, E., et al. 2008, ApJ, 673, 1080

70. *A Chandra X-ray detection of the L dwarf binary Kelu-1: Simultaneous Chandra and Very Large Array observations*  
Audard, M., Osten, R. A., Brown, A., Briggs, K. R., Guedel, M., Hodges-Kluck, E., & Gizis, J. E., 2007, *A&A*, 471, 63
69. *Characterizing the Disk around the TW Hydrae Association Brown Dwarf 2MASSW J1207334-393254*  
Riaz, B., & Gizis, J.E. 2007, *ApJ*, 661, 354
68. *Infrared Observations of a Mid-L Dwarf with Strong H alpha Emission*  
Riaz, B., & Gizis, J.E. 2006, *ApJ*, 659, 675
67. *Halo Stars near the Hydrogen-Burning Limit: The M/L Subdwarf Transition*  
Gizis, J.E., & Harvin, J. 2006, *AJ*, in press
66. *Identification of New M dwarfs in the Solar Neighborhood*  
Riaz, B., Gizis, J.E., & Harvin, J. *AJ*, 132, 866
65. *Spitzer Observations of Nearby M Dwarfs*  
Riaz, B., Mullan, D.J., & Gizis, J.E. 2006, *ApJ*, in press
64. *RI Photometry of 2MASS-selected Late M and L Dwarfs*  
Liebert, J., & Gizis, J. E. 2006, *PASP*, 118, 659
63. *Spitzer Observations of Two TW Hydrae Association Brown Dwarfs*  
Riaz, B., Gizis, J.E., & Hmiel, A. 2006, *ApJ*, 639, L79
62. *The Two Micron All-Sky Survey (2MASS)*  
Skrutskie, M.F., et al. 2006, *AJ*, 131, 1163
61. *Spectroscopic Survey of M Dwarfs within 100 Parsecs of the Sun*  
Bochanski, J. J., Hawley, S. L., Reid, I. N., Covey, K. R., West, A. A., Tinney, C. G., & Gizis, J. E. 2005, *AJ*, 130, 1871
60. *First Ultraviolet Spectrum of a Brown Dwarf: Evidence for H<sub>2</sub> Fluorescence and Accretion*  
Gizis, J.E., Shipman, H.L., & Harvin, J.A. 2005, *ApJ*, 630, L89
59. *A Deep Look at the Brown Dwarf Binary epsilon Indi Bab with Chandra and ATCA*  
Audard, M., Brown, A., Briggs, K.R., Gudel, M., Telleschi, A. & Gizis, J.E, 2005, *ApJ*, 625, L63
58. *Probing the LHS Catalog II. Faint Proper Motion Stars*  
Reid, I.N. & Gizis, J.E. 2005, *PASP*, 117, 676

57. *2MASSW J0746425+200321: Is the Secondary a Star or Brown Dwarf?*

Gizis, J.E., & Reid, I.N. 2006, AJ, 131, 638

56. *The Magnetic Properties of an L Dwarf Derived from Simultaneous Radio, X-Ray, and H alpha Observations*

Berger, E., Rutledge, R.E., Reid, I.N., Bildsten, L., Gizis, J.E., Liebert, J., Martin, E., Basri, G., Jayawardhana, R., Brandeker, A., Fleming, T.A., Johns-Krull, C.M., Giampapa, M.S., Hawley, S.L., & Schmitt, J.H.M.M. 2005, ApJ, 627, 960

55. *A Chandra Observation of a TW Hydrae Association Brown Dwarf*

Gizis, J.E. & Bharat, R. 2004, ApJ, 608, L113

54. *The First Substellar Subdwarf? Discovery of a Metal-poor L Dwarf with Halo Kinematics*

Burgasser, A.J., Kirkpatrick, J.D., Burrows, A., Liebert, J., Reid, I.N., Gizis, J.E., McGovern, M.R., Prato, L., McLean, I.S. 2003, ApJ, 592, 1186

53. *Hubble Space Telescope Observations of Binary Very-Low-Mass Stars and Brown Dwarfs*

Gizis, J.E., Reid, I.N., Knapp, G.R., Liebert, J., Kirkpatrick, J.D., Koerner, D.W., & Burgasser, A.J. 2003, AJ, 125, 3302

52. *Binarity in Brown Dwarfs: T Dwarf Binaries Discovered with the Hubble Space Telescope WPC2*

Burgasser, A.J., Reid, I.N., Kirkpatrick, J.D., Brown, M.E., Miskay, C.L. & Gizis, J.E. 2003, ApJ, 586, 512

51. *A Flaring L5 Dwarf: the Nature of H alpha Emission in Very Low Mass (Sub)Stellar Objects*

Liebert, J., Kirkpatrick, J.D., Cruz, K.L., Reid, I.N., Burgasser, A., Tinney, C.G., & Gizis, J.E. 2003, AJ, 125, 343

50. *The Palomar/MSU Nearby Star Spectroscopic Survey. IV. The Luminosity Function in the Solar Neighbourhood and M Dwarf Kinematics*

Reid, I.N., Gizis, J.E., & Hawley, S.L. 2002, AJ, 124, 2721

49. *Astrometry and Photometry for Cool Dwarfs and Brown Dwarfs*

Dahn, C.C., Harris, H.C., Vrba, F.J., Guetter, H.H., Canzian, B., Henden, A.A., Levine, S.E., Luginbuhl, C.B., Monet, A.K.B., Monet, D.G., Pier, J.R., Stone, R.C., Walker, R.L., Burgasser, A.J., Gizis, J.E., Kirkpatrick, J.D., Liebert, J., & Reid, I.N. 2002, AJ, 124, 1170

48. *Brown Dwarfs and the TW Hydrae Association*

Gizis, J.E. 2002, ApJ, 575, 484

*47. High Resolution Spectroscopy of Ultracool M Dwarfs*

Reid, I.N., Kirkpatrick, J.D., Liebert, J., Gizis, J.E., Dahn, C.C., & Monet, D.G. 2002, AJ, 124, 519

*46. The Palomar/MSU Nearby Star Spectroscopic Survey III: Chromospheric Activity, M-dwarf Ages and the Local Star Formation History*

Gizis, J.E., Reid, I.N., & Hawley, S.L. 2002, AJ, 123, 3356

*45. A Search for Variability in the Active T dwarf 2MASS 1237+6526*

Burgasser, A.J., Liebert, J., Kirkpatrick, J.D., & Gizis, J.E. 2002, AJ, 123, 2744  
Electronic Article (HTML)

*44. Effective Temperatures of Late L Dwarfs and the Onset of Methane Signatures*

Schweitzer, A., Gizis, J.E., Hauschildt, P.H., Allard, F., Howard, E.M., & Kirkpatrick, J. D. 2002, ApJ, 566, 435

*43. The Spectra of T Dwarfs I: Near-Infrared Data and Spectral Classification*

Burgasser, A.J., Kirkpatrick, J.D., Brown, M.E., Reid, I.N., Liebert, J., Matthews, K., Burrows, A., Gizis, J.E., Dahn, C.C., Monet, D.G., Cutri, R.M., & Skrutskie, M.F. 2002, ApJ, 564, 421

*42. Three Wide Separation L-Dwarf Companions from 2MASS: Gl 337C, Gl 618.1B, and HD 89744B*

Wilson, J.C., Kirkpatrick, J.D., Gizis, J.E., Skrutskie, M.F., Monet, D.G., & Houck, J.R. 2001, AJ, 122, 1989

*41. Brown Dwarf Companions to G-Type Stars. I. Gliese 417B and Gliese 584C*

Kirkpatrick, J.D., Dahn, C.C., Monet, D.G., Reid, I.N., Gizis, J.E., Liebert, J., & Burgasser, A. 2001, AJ, 121, 3235

*40. Three Newly-Discovered M-Dwarf Companions of Solar Neighborhood Stars*

Kirkpatrick, J.D., Liebert, J., Cruz, K.L., Gizis, J.E., & Reid, I.N. 2001, PASP, 113, 814

*39. Analysis of Keck HIRES Spectra of Early-L Dwarfs*

Schweitzer, A., Gizis, J.E., Hauschildt, P.H., Allard, F., & Reid, I.N. 2001, ApJ, 555, 368

*38. Near-Infrared Spectral Classification of Late-M and L Dwarfs*

Reid, I.N., Burgasser, A.J., Cruz, K.L., Kirkpatrick, J.D., & Gizis, J.E. 2001, AJ, 121, 1710

*37. Substellar Companions to Main Sequence Stars: No Brown Dwarf Desert at Wide Separations*

Gizis, J.E., Kirkpatrick, J.D., Burgasser, A., Reid, I.N., Monet, D.G., Liebert, J., & Wilson, J.C. 2001, ApJL, 551, L163

36. *CorMASS: A Compact and Efficient NIR Spectrograph for Studying Low-Mass Objects*  
Wilson, J.C., Skrutskie, M.F., Colonna, M.R., Enos, A.T., Smith, J.D., Henderson, C.P., Gizis, J.E., Monet, D.G., & Houck, J.R. 2001, *PASP*, 113, 227

35. *A Search for L Dwarf Binary Systems*

Reid, I.N., Gizis, J.E., Kirkpatrick, J.D., & Koerner, D.W. 2000, *AJ*, 121, 489

34. *A Global Photometric Analysis of 2MASS Calibration Data*

Nikolaev, S., Weinberg, M., Skrutskie, S., Cutri, R., Wheelock, S., Gizis, J., & Howard, E. 2000, *AJ*, 120, 3340

33. *2MASS Discoveries of Cool, Dust-Enshrouded Carbon Stars out of the Galactic Plane*

Liebert, J., Cutri, R.M., Nelson, B., Kirkpatrick, J.D., Gizis, J.E., & Reid, I.N. 2000, *PASP*, 112, 1315

32. *A 2MASS L Dwarf Companion to the Nearby K Dwarf GJ 1048*

Gizis, J.E., Kirkpatrick, J.D., & Wilson, J.C. 2001, *AJ*, 121, 2185

31. *Discovery of a Bright Field Methane (T-type) Brown Dwarf by 2MASS*

Burgasser, A.J., Wilson, J.C., Kirkpatrick, J.D., Skrutskie, M.S., Colonna, M.R., Enos, A.T., Smith, J.D., Henderson, C.P., Gizis, J.E., Brown, M.E., & Houck, J.R. 2000, *AJ*, 120, 1100

30. *New Neighbors from 2MASS: Activity and Kinematics at the Bottom of the Main Sequence*

Gizis, J.E., Monet, D.G., Reid, I.N., Kirkpatrick, J.D., Liebert, J. & Williams, R.J. 2000, *AJ*, 120, 1085

29. *Sixty-seven Additional L Dwarfs Discovered by the 2-Micron All Sky Survey*

Kirkpatrick, J.D., Reid, I.N., Liebert, J., Gizis, J.E., Burgasser, A.J., Monet, D.G., Dahn, C.C., Nelson, B. & Williams, R.J. 2000, *AJ*, 120, 447

28. *Detection of H Alpha Emission in a Methane (T-type) Brown Dwarf*

Burgasser, A.J., Kirkpatrick, J.D., Reid, I.N., Liebert, J., Gizis, J.E., & Brown, M.E. 2000, *AJ*, 120, 473

27. *An Improved Red Spectrum of the Methane or T-Dwarf SDSS~1624+0029: Role of the Alkali Metals and Dust*

Liebert, J., Reid, I.N., Burrows, A., Burgasser, A.J., Kirkpatrick, J.D., & Gizis, J.E. 2000, *ApJ*, 533, L155

26. *Hubble Space Telescope Observations of M Subdwarfs*

Gizis, J.E., & Reid, I.N. 2000, *PASP*, 112, 610

25. *Discovery of a Brown Dwarf Companion to Gliese 570ABC: A 2MASS T Dwarf Significantly Cooler than Gliese 229B*  
Burgasser, A.J., Kirkpatrick, J.D., Cutri, R.M., McCallon, H., Kopan, G., Gizis, J.E., Liebert, J., Reid, I.N., Brown, M.E., Monet, D.G., Dahn, C.C., Beichman, C.A., & Skrutskie, M.F. 2000, ApJ, 531, L57
24. *Four Nearby L Dwarfs*  
Reid, I.N., Kirkpatrick, J.D., Gizis, J.E., Dahn, C.C., Monet, D.G., Williams, R.J., Liebert, J., & Burgasser, A. 2000, AJ, 119, 369
23. *Two Nearby M Dwarf Binaries From 2MASS*  
Gizis, J.E., Monet, D.G., Reid, I.N., Kirkpatrick, J.D., & Burgasser, A.J. 2000, MNRAS, 311, 385
22. *BR10021-0214: Another Surprise at the Bottom of the Main Sequence*  
Reid, I.N., Kirkpatrick, J.D., Gizis, J.E., & Liebert, J. 1999, ApJ, 527, L105
21. *Discovery of Four Field Methane (T-type) Dwarfs with 2MASS*  
Burgasser, A.J., Kirkpatrick, J.D., Brown, M.E., Reid, I.N., Gizis, J.E., Dahn, C.C., Monet, D.G., Beichman, C.A., Liebert, J., Cutri, R.M., & Skrutskie, M.F. 1999, ApJ, 522, L65
20. *A 2MASS Survey for Brown Dwarfs Toward the Hyades*  
Gizis, J.E., Reid, I.N., & Monet, D.G. 1999, AJ, 118, 997
19. *L Dwarfs and the Substellar Mass Function*  
Reid, I.N., Kirkpatrick, J.D., Liebert, J., Burrows, A., Gizis, J.E., Burgasser, A., Dahn, C.C., Monet, D., Cutri, R., Beichman, C.A., & Skrutskie, M. 1999, ApJ., 521, 613
18. *Dwarfs Cooler Than "M": The Definition of Spectral Type "L" using Discoveries from the 2-Micron All-Sky Survey (2MASS)*  
Kirkpatrick, J.D., Reid, I.N., Liebert, J., Cutri, R.M., Nelson, B., Beichman, C.A., Dahn, C.C., Monet, D.G., Gizis, J.E., & Skrutskie, M.F. 1999, ApJ, 519, 802
17. *M Subdwarfs: The Population II Luminosity Function*  
Gizis, J.E., & Reid, I.N. 1999, AJ, 117, 508
16. *The Distance to NGC 6397 by M-Subdwarf Main-Sequence Fitting*  
Reid, I.N., & Gizis, J.E. 1998, AJ, 116, 2929
15. *High Chromospheric Activity in M Subdwarfs*  
Gizis, J.E. 1998, AJ, 115, 2053
14. *The Lower Main Sequence and the Orbital Period Distribution of Cataclysmic Variable Stars*

Clemens, J.C., Reid, I.N., Gizis, J.E., & O'Brien, M.S., 1998, ApJ, 496, 382

*13. APMPM J1523-0245: A New High-Proper Motion Cool Subdwarf*

Gizis, J.E., Scholz, R.-D., Irwin, M., Jahreiß, H. 1997, MNRAS, 292, L41

*12. M Subdwarf Secondaries: A Test of the Metallicity Scale*

Gizis, J.E., & Reid, I.N. 1997, PASP, 109, 1233

*11. Low-mass Binaries in the Hyades -- A Scarcity of Brown Dwarfs*

Reid, I.N., & Gizis, J.E. 1997, AJ, 114, 1992

*10. Probing the LHS Catalog I. New Nearby Stars and the Coolest Halo Subdwarf*

Gizis, J.E., & Reid, I.N. 1997, PASP, 109, 849

*9. Low-mass Binaries and the Luminosity Function*

Reid, I.N., & Gizis, J.E. 1997, AJ, 113, 2246

*8. Faint M-dwarfs and the Structure of the Galactic Disk*

Reid, I.N., Gizis, J.E., Cohen, J., Pahre, M., Hogg, D., Cowie, L., Hu, E., & Songaila, A. 1997, PASP, 109, 559

*7. M-Subdwarfs: Spectroscopic Classification and the Metallicity Scale*

Gizis, J.E. 1997, AJ, 113, 806

*6. The Palomar/MSU Nearby-Star Spectroscopic Survey - II: The Southern M-dwarfs and Investigation of Magnetic Activity*

Hawley, S.L., Gizis, J.E. & Reid, I.N. 1996, AJ, 112, 2799

*5. GJ 1230: A Nearby Triple System*

Gizis, J.E., & Reid, I.N. 1996, AJ, 111, 365

*4. Trigonometric Parallaxes and the HR Diagram at the Bottom of the Main Sequence.*

Tinney, C.G., Reid, I.N., Gizis, J. & Mould, J.R., 1995, AJ, 110, 3014

*3. The Palomar/MSU Nearby-Star Spectroscopic Survey - I: The Northern M-dwarfs - Bandstrengths and Kinematics*

Reid, I.N., Hawley, S.L., & Gizis, J.E. 1995, AJ, 110, 1838

*2. Low-mass Binaries in the Hyades*

Gizis, J., & Reid, N. 1995, AJ, 110, 1248

*1. An X-Ray Image of the Fornax Dwarf Spheroidal Galaxy*

Gizis, J.E., Mould, J.R., & Djorgovski, S. 1993, PASP, 105, 871

## Book Contract

*An Introduction to Brown Dwarfs: Failed Stars and Super-Jupiters*

Under contract with AAS-IOP. Manuscript delivery due date May 1, 2020.

## Other Selected Publications

*Panel Discussion on the Brown Dwarf-Exoplanet Connection*

Pinfield, D., Beaulieu, J.-P., Burgasser, A.J., Delorme, P, Gizis, J., Konopacky, Q.  
Memorie della Societa Astronomica Italiana, v.84, No. 4, p.1154

*Not Alone: Tracing the Origins of Very Low Mass Stars and Brown Dwarfs Through Multiplicity Studies*

Burgasser, A., Reid, I.N., Siegler, N., Close, L., Allen, P., Lowrance, P., & Gizis, J.  
Protostars and Planets V, 2005. [review]

*Perspectives: Astronomy: Brown Dwarfs*

Gizis, J.E. 2003, Science, 294, 801

*Explanatory Supplement to the 2MASS All Sky Data Release*

Cutri, R.M., Skrutskie, M.F., Van Dyk, S., Beichman, C.A., Carpenter, J.M., Chester, T., Cambresy, L., Evans, T., Fowler, J., Gizis, J., Howard, E., Huchra, J., Jarrett, T., Kopan, E.L., Kirkpatrick, J.D., Light, R.M, Marsh, K.A., McCallon, H., Schneider, S., Stiening, R., Sykes, M., Weinberg, M., Wheaton, W.A., Wheelock, S. & Zacarias, N. 2003

*What Is a Planet?*

McCaughrean, M., Reid, N., Tinney, C., Kirkpatrick, D., Hillenbrand, L., Burgasser, A., Gizis, J., & Hawley, S. 2001, Science, 291, 1487

## Recent White Papers

### CASCA Long-Range Plan 2020 (Canada)

*LRP2020: The Opportunity of Young Nearby Associations with the Advent of the Gaia Mission.*

Gagné, J, et al., 2019, arXiv:1911.05143

### Astro2020: Decadal Survey on Astronomy and Astrophysics



*Next Generation LSST Science*  
Jha, S., et al. 2019, BAAS, 51, 7, 268

*Better support for collaborations preparing for large-scale projects: the case study of the LSST Science Collaborations*  
Bianco, F., et al. 2019, BAAS, 51, 7, 185

*Revealing the Turbulent, Cloudy Nature of Young Giant Exoplanet Analogs*  
Vos, J., et al. 2019, Extreme Solar Systems 4, id. 328.05

*Establishing an Empirical Substellar Sequence to Planetary Masses*  
Dupuy, T., et al. 2019, BAAS, 51, 3, 469

*Imaging Cool Giant Planets in Reflected Light: Science Investigations and Synergy with Habitable Planets*  
Marley, M., et al. 2019, BAAS, 51, 3, 345

*Mapping Ultracool Atmospheres: Time-domain Observations of Brown Dwarfs and Exoplanets*  
Apai, D., et al. 2019, BAAS, 51, 3, 204

*Discovery of Cold Brown Dwarfs or Free-Floating Giant Planets Close to the Sun*  
Leggett, S.K., et al. 2019, BAAS, 51, 3, 95

*The Need for Laboratory Measurements and Ab Initio Studies to Aid Understanding of Exoplanetary Atmospheres*  
Fortney, J., et al. 2019, No. 146

**2018 LSST Cadence Optimization White Papers**  
**<https://www.lsst.org/submitted-whitepaper-2018>**

*The Definitive Map of the Galactic bulge*  
Gonzalez, O., et al. 2018

*Calibrating Milky Way Maps: An LSST Bright(ish) Star Survey*  
Gizis, J.E., 2018

*The Plane's The Thing: The Case for Wide-Fast-Deep Coverage of the Galactic Plane and Bulge*  
Strader., J., et al. 2018

**Other LSST White Papers**

*Science-Driven Optimization of the Observing Strategy*

LSST Science Collaborations: Marshall, P., et al. 2017, arXiv:1708.04058

### **Seminar and Conference Talks (2012-2020)**

*"Data Science and Mapping the Milky Way with LSST"*

UD Data Science Symposium, 2019

*"What LSST can do for you, and what you can do for LSST"*

Brown Dwarfs to Exoplanet Connection, 2019

*"Stars, Milky Way & Local Volume Collaboration Overview"*

LSST Project and Community Workshop, 2019

*"Hot Flares and Cold Clouds: The K2 View of Ultracool Dwarfs"*

Seminar, Space Telescope Science Institute, 2018

*"Ultracool Dwarfs with K2"*

Dwarf Stars and Clusters with K2, Boston University, 2018

*"Kepler and Spitzer View of Brown Dwarfs and Ice Giants"*

Penn State, 2017, seminar

*"Milky Way Science with LSST: Solar Neighbourhood"*

LSST:UK, 2017 [remote]

*"Astronomy: New Era of Petascale Data Science"*

UD Data Science Symposium, 2017

*"Crowded Field Photometry"*

LSST Project and Community Workshop, 2016

*"Brown Dwarfs in Time"*

AstroPhilly 2016

*"K2 Survey of Ultracool Dwarfs"*

American Astronomical Society Summer Meeting (228), 2016

*"Ultracool Dwarfs in Time"*

Georgia State University, 2016, seminar

*"Flares from Ultracool L Dwarfs with Kepler"*

IAU General Assembly, 2015

*“Brown Dwarfs, Dusty Photospheres, and Surface Gravity “*  
American Astronomical Society Summer Meeting 224, 2014

*“Kepler and Brown Dwarfs”*  
The Brown Dwarf-Exoplanet Connection Conference, 2014

*“Clouds Outside the Solar System: New Observations of Brown Dwarfs”*  
Carnegie DTM, 2014, colloquium

*“LSST Astrometry”*  
LSST 2014 Cadence Workshop, 2014

*“The Brown Dwarfs-Exoplanet Connection”*  
Invited Panel Discussion, “Brown Dwarfs Come of Age” Conference, 2013

*“Spots and White Light Flares in an L Dwarf”*  
Brown Dwarfs Come of Age Conference, 2013

*“First Detection of White Light Flares in an L Dwarf”*  
American Astronomy Society summer meeting (222), 2013

*“The Puzzle of Extremely Red L Dwarfs*  
NASA Goddard, 2013, Exoplanet Lunch Seminar

*“Lessons on Substellar Atmospheres from Newly Discovered Nearby Brown Dwarfs”*  
NOAO, 2012 FLASH seminar

*“The Physics of Low-Mass Stars and Brown Dwarfs”*  
Invited Talk, AAPT Summer Meeting, 2012

*“Completing the Nearby Stellar and Substellar Census with WISE and 2MASS”*  
Talk, “Cool Stars 17” Conference, 2012

*“An Infrared Proper Motion Survey: Finding nearby brown dwarfs and stars in the Zone of Avoidance”*  
AMNH, 2012, seminar

#### **External Grants (PI Gizis)**

24. *Enabling Science by intra-collaboration exchanges: conferences, un-conferences, hackathons for TVS and SMWL*  
LSST Corporation (5 PIs), \$35,000,

23. *Cloud Evolution on Uranus with K2 and HST*  
STScI, \$38,774
22. *Summer Internship for LSST Astronomy*  
LSST Corporation, \$5,000
21. *The X-Ray Corona of a Flaring L Dwarf*  
Chandra, \$34,424, 2015
20. *Kepler Guest Observer – Cycle 5*  
Kepler, \$12,000, 2015
19. *Simultaneous Spitzer and Kepler K2 Observations of a Bright, Nearby L8 dwarf.*  
Spitzer, \$5,000, 2014
18. *Spitzer-Kepler Studies of a Periodic L Dwarf*  
Spitzer, \$5,000, 2013
17. *Kepler Observations of an Ultracool L Dwarf*  
Kepler, \$44,396, 2013-2014
16. *Pulsations and Over-Sized M Dwarfs*  
Kepler, \$31,290, 2012-2013
15. *Are Convective Dynamos Super-Saturated at High Rotation Velocities?*  
Chandra, \$18,550, 2012-2013
14. *Disk masses for ~ 10 Myr old brown dwarf disks*  
Herschel, \$5000, 2011-2013
13. *Search for X-Ray Emission from TW Hya Association Brown Dwarfs*  
Chandra, \$35,718, 2008-2011
12. *Observations of a Brown Dwarf Planetary System*  
NASA (Origins), \$239,000, 2006-2009
11. *Spitzer Observations of the Most Active L Dwarf*  
Spitzer, \$11,828, 2006-2008
10. *Bringing Infrared Astronomy to Eighth Grade Students Through an Energy Curriculum*  
Spitzer/EPO, \$18,000, 2005-2007, Co-I Shipman
9. *Searching for Disks in TW Hya Association Brown Dwarfs*

Spitzer, \$15,300, 2005-2007

*8. Coronal and Chromospheric Heating in Active Dwarf Stars*

Spitzer, \$37,100, 2005-2007, Co-I Mullan

*7. Updating a Statewide Grade 8 Astronomy Curriculum*

HST/EPO, \$5119, 2004-2006

*6. Ultraviolet Spectrum of a Young Brown Dwarf*

HST, \$28,000, 2004-2006, Co-I Shipman

*5. NICMOS Observations of Two Binary Brown Dwarfs*

HST, \$27,000, 2003-2005

*4. Snapshot Survey of Halo Subdwarfs*

HST, \$36,000, 2003-2005

*3. Colliding Winds in the LMC Massive Binary SK-67 105*

FUSE, \$17,300, 2002-2004

*2. X Rays from a Highly Active, Young Brown Dwarf*

Chandra, \$42,484, 2002-2004

*1. A Search for Young Brown Dwarfs and Giant Planets*

UDRF, \$27,290, 2001-2002

### **External Telescope Resources (as PI)**

- Hubble Space Telescope
- Chandra Telescope
- Spitzer Space Telescope
- Kepler (Original and K2) targets
- Far Ultraviolet Spectroscopic Explorer (FUSE)
- Gemini 8-meter telescope
- CTIO 4-meter
- IRTF telescope
- KPNO 2.1-meter
- CTIO 1.5-meter

## PhD Students Supervised

Basmah Riaz, 2008 (Researcher, Ludwig-Maximilians-University of Munich)

John Shaw, 2011 (Lab Director & secondary appt. Assistant Professor, University of Delaware)

Phil Castro, 2012 (Applied Optimization)

Rishi Paudel, 2019.(Postdoc, NASA Goddard), *UD University Dissertation Fellowship*

Jinbaio Ji, in progress.

## UD Courses Taught

- PHYS133 Introduction to Astronomy
- PHYS144 Concepts of the Universe
- PHYS145 Black Holes and Cosmic Evolution
- PHYS169 Perspectives on Physics and Astronomy (1 credit)
- PHYS201 Introductory Physics I
- PHYS202 Introductory Physics II
- PHYS207 Fundamentals of Physics I
- PHYS208 Fundamentals of Physics II
- PHYS309 Physics of the 20<sup>th</sup> and 21<sup>st</sup> Centuries
- PHYS310 Introduction to Thermal Physics
- PHYS333 Fundamentals of Astrophysics
- PHYS604 Electromagnetism II
- PHYS630 Galaxies
- PHYS838 Special Topics: Galactic Dynamics

## Notable Media and Public Appearances

- The Delaware Way, Me-TV2 (KJWP TV Channel 2 Wilmington/Philadelphia), 2017 [TRAPPIST-1]
- Wilmington News Journal, front page (8 March 2017) [TRAPPIST-1]
- Radio Times, WHYY radio, 2015 [PLUTO]
- Alan Loudell Show, WDEL radio, many astronomy topics
- Talk to 4<sup>th</sup> graders, Munsey Park Elementary School, Manhasset, NY, 2017

- UD Talk on “Nobel Prize in Physics 2011”, 2011.