MICHAEL S. VOGELEY
CURRICULUM VITAE

Education
Ph.D. (Astronomy), Harvard University, 1993
Thesis advisor: Margaret J. Geller
A.M. (Astronomy), Harvard University, 1988
A.B. (Astrophysical Sciences), Princeton University, 1987, *magna cum laude*
Thesis advisor: Jeremiah P. Ostriker

Professional Appointments
2010- Professor of Physics, Drexel University
2015-2020 Associate Department Head for Graduate Studies
2006-2015 Director of Graduate Studies
2005-2010 Associate Professor, Drexel University
1999-2005 Assistant Professor, Drexel University
1998-1999 Research Staff Member, Princeton University
1997-1998 Hubble Fellow, Princeton University
1995-1997 Hubble Fellow, Space Telescope Science Institute
1993-1995 Postdoctoral Fellow, Johns Hopkins University

Visiting Positions
2019-2020 Member, Institute for Advanced Study
2013 Visiting Faculty Fellow, Princeton University
2005-2006 Visiting Faculty Fellow, Princeton University

Awards
2009 Drexel Faculty Mentor of the Year
2004 Drexel College of Arts and Sciences Faculty Excellence Award
2004 Drexel 10^6 Club

Fellowships and Honors
2019-2020 Ambrose Monell Foundation Fellowship, Institute for Advanced Study
1995-1998 NASA Hubble Postdoctoral Fellowship
1991-1993 NASA Graduate Student Research Fellowship

Professional Societies
American Astronomical Society (1989-)
International Astronomical Union (2020-)
Society of Catholic Scientists (2017-)

Research Interests
Observational and theoretical cosmology, large-scale structure, galaxy formation and evolution, active galactic nuclei, time series analysis, statistical analysis of massive data sets, data mining analysis of scientific literature

Major Project Participation
Sloan Digital Sky Survey: Drexel lead scientist, Advisory Council member, Collaboration Committee representative, "builder" (recognition of essential contributions to survey infrastructure), and member of Large-Scale Structure, Clusters, and Galaxies Working Groups, External Collaborator in SDSS-III. Large Synoptic Survey Telescope collaboration: member of Galaxies and AGN Working Groups. Chair, LSSTC Postdoctoral Fellowship naming task force.

Sponsored Research

Grants Held
PI on all grants except where indicated.

HST Cycle 5 NASA grant "Fluctuations in the Extragalactic Background Light" $63,203 to Johns Hopkins (7/1/95-6/30/96).

HST Cycle 5 NASA grant "Revealing the Universe on Gigaparsec Scales: The Power Spectrum of QSO Absorption Line Systems" (Co-Investigator) $40,000 to Johns Hopkins (7/1/95-6/30/96).

Hubble Postdoctoral Fellowship grant (NASA) $185,617 to Space Telescope Science Institute and Princeton (9/1/95-8/31/98).

NASA Astrophysical Theory Program "The Formation and Evolution of Groups and Filaments" (Co-Investigator with David Spergel) $355,828 to Princeton (1/1/98-12/31/00).

HST Cycle 7 NASA "Fluctuations in the Extragalactic Background Light" $62,434 to Drexel (12/01/99-11/30/01).

AAS Small Research Grant "Voids and Void Galaxies" $3,800 to Drexel (4/10/00-12/10/00).

John Templeton Foundation Cosmology "Tests of Cosmological Timing and Tuning from Galaxy Formation in Cosmic Voids" $69,000 to Drexel (8/1/00-7/31/03).

NSF Astronomy and Astrophysics grant "Collaborative Research: Voids and Void Galaxies" $243,907 to Drexel (6/1/00-5/31/04).

NSF REU supplement to "Collaborative Research: Voids and Void Galaxies" $15,478 to Drexel (6/1/01-5/31/02).

NASA Long Term Space Astrophysics “Probing the Evolution of AGN Clustering” $541,313 to Drexel (6/1/02-5/31/08).

NSF ITR “Beowulf Applications Symbolic Interface (BASIN)” $1,400,000 to Drexel (10/1/03-9/30/09), Co-PI with McMillan, Goldberg, Char

NSF Astronomy and Astrophysics grant “Empirical Tests for Galactic Black Hole Growth,” $292,714 to Drexel (8/1/05-7/31/10)

NSF Astronomy and Astrophysics grant “Voids as Laboratories for Galaxy Formation,” $79,970 to Drexel (9/1/05-8/31/10)

NSF SEI grant “Coordinated Visualization and Analysis of Sky Survey Data and Astronomical Literature,” $413,050 to Drexel (7/15/06-7/14/10), Co-PI with Chaomei Chen

NASA Astrophysics Data Program grant ``The Relationship Between AGN Spectral Energy Distributions and Feedback," $244,780 to Drexel (2/28/2008-2/27/2011), Co-Investigator with Gordon Richards

NASA Astrophysics Data Analysis Program grant “Probing AGN Accretion Physics with Kepler,” $159,534 to Drexel (4/1/2014-3/31/2017).

NSF Astronomy and Astrophysics grant “Probing Galaxy Formation and Cosmology with Dwarf Galaxies in Voids,” $247,951 to Drexel (8/15/2014-7/31/2018)

NASA AS&ASTAR Fellowship (for Rebecca Phillipson) “Investigating the Relationship Between Black Hole Binaries and Active Galactic Nuclei,” $165,000 to Drexel (9/1/2016-8/31/2019).

NASA Astrophysics Data Analysis Program “AGN Accretion Physics: Insights from K2,” $216,200 to Drexel (1/1/2017-12/31/2018).

NSF Research Experiences for Undergraduates supplement to grant ““Probing Galaxy Formation and Cosmology with Dwarf Galaxies in Voids,” $6,000 to Drexel (5/01/2017-8/31/2018).

LSST Corporation “Undergraduate LSST Co-ops at Drexel University,” $26,880 to Drexel (3/15/2018-3/14/2019), Co-PI with Gordon Richards.

NASA K2 Guest Observer – Cycle 6 “Quasar Variability as a Function of Accretion Rate,” $40,000 to Drexel (10/01/2018-9/30/2019), Co-Investigator with Gordon Richards.

LSST Corporation “Undergraduate LSST Co-ops at Drexel University,” $26,880 to Drexel (3/15/2018-3/14/2019), Co-PI with Gordon Richards.

NASA Fellowship (for Rebecca Phillipson) “Investigating the Mechanisms Driving X-ray variability of Stellar Mass Black Holes to Active Galaxies,” $55,000 to Drexel (9/1/2019-8/31/2020).

Institute for Advanced Study member fellowship from Ambrose Monell Foundation, $45,000 to Drexel (09/01/2019-07/31/2020).

John Templeton Foundation “What Stretches the Fabric of the Cosmos? Probing Fundamental Physics in Cosmic Voids Using Artificial Intelligence,” $234,263 to Drexel (09/01/2021-08/31/2024).

NASA FINESST "Investigating Chaos and Complexity in the Accretion Modes of Stellar and Supermassive Black Holes," $150,000 to Drexel (09/01/2023-08/31/2026), Co-Investigator with Gordon Richards.

NASA ADAP "Probing AGN and BHB with Swift/BAT," $347,730 to Drexel (09/01/2024-08/31/2027), Co-Investigator with Gordon Richards.

Computing Grants Awarded
NCSA Alliance “Galaxy Formation in Cosmic Voids” 75,000 service units on SGI ORIGIN2000 (6/1/01-5/31/02

Publications

Refereed Articles

1. “Topology of Large-Scale Structure. III. Analysis of Observations,” Gott, J. R., Miller, J., Thuan, T.X., Schneider, S.E., Weinberg, D.H., Gammie, C., Polk, K., Vogeley, M.S., Jeffrey, S., Bhavsar, S., Melott, A.L., Giovanneli, R., Haynes., M.P., Tully, R.B., & Hamilton A.J.S. 1989, Astrophysical Journal, 340, 625.

2. “Dust in QSO Absorption Line Systems,” Ostriker, J. P., Vogeley, M. S., & York, D. G. 1990, Astrophysical Journal, 364, 405.

3. “Void Statistics of the CfA Redshift Survey,” Vogeley, M. S., Geller, M. J., & Huchra, J. P. 1991, Astrophysical Journal, 382, 44.

4. “Large-Scale Clustering of Galaxies in the CfA Redshift Survey,” Vogeley, M. S., Park, C., Geller, M. J., & Huchra, J. P. 1992, Astrophysical Journal, 391, L5.

5. “The Kinematics of Dense Clusters of Galaxies: I. The Data,”
Zabludoff, A. I., Geller, M. J., Huchra, J. P., & Vogeley, M. S. 1993, Astronomical Journal, 106, 1273.

6. “Topological Analysis of the CfA Redshift Survey,” Vogeley, M. S., Park, C., Geller, M. J., Huchra, J. P., & Gott, J. R. 1994, Astrophysical Journal, 420, 525.

7. “Power Spectrum, Correlation Function, and Tests for Luminosity Bias in the CfA Redshift Survey,” Park, C., Vogeley, M. S., Geller, M. J., & Huchra, J. P. 1994, Astrophysical Journal, 431, 569.

8. “Voids and Constraints on Non-Linear Gravitational Clustering,” Vogeley, M. S., Geller, M. J., Park, C., & Huchra, J. P. 1994, Astronomical Journal, 108, 745.

9. “The Power Spectrum of Galaxies in the Nearby Universe,” da Costa, L. N., Vogeley, M. S., Geller, M. J., Huchra, J. P., & Park, C., 1994, Astrophysical Journal, 437, L1.

10. “Eigenmode Analysis of Galaxy Redshift Surveys: I. Theory and Methods,” Vogeley, M. S., & Szalay, A. S. 1996, Astrophysical Journal, 465, 34.

11. “Measuring the Galaxy Power Spectrum with Future Redshift Surveys,” Tegmark, M., Hamilton, A. J. S., Strauss, M. A., Vogeley, M. S., & Szalay, A. S. 1998, Astrophysical Journal, 499, 555.

12. “The CfA Redshift Survey: Data for the South Galactic Cap,” Huchra, J. P., Vogeley, M. S., & Geller, M. J. 1999, Astrophysical Journal Suppl., 121, 287.

13. “High-Redshift Quasars Found in Sloan Digital Sky Survey Commissioning Data,” Fan et al. 1999, Astronomical Journal, 118, 1.

14. “The Discovery of a Luminous z=5.80 Quasar from the Sloan Digital Sky Survey,” Fan et al. 2000, Astronomical Journal, 120, 1167.

15. “Weak Lensing Measurements of Galaxy Halos with the SDSS I: Commissioning Data,” Fischer et al. 2000, A. J., 120, 1198.

16. “Median Statistics, H_0, and the Accelerating Universe,” Gott, J.R., Vogeley, M.S., Podariu, S., & Ratra, B. 2001, Astrophysical Journal, 549, 1.

17. “The Structure of the Galactic Halo Implied by RR Lyrae Candidates Found in Sloan Digital Sky Survey Commissioning Data,” Ivezic et al. 2000, Astronomical Journal, 120, 963.

18. “Technical Overview of the Sloan Digital Sky Survey”, York et al. 2000, Astronomical Journal, 120, 1579.

19. “Binned Cosmic Microwave Background Anisotropy Power Spectra: Peak Location,” Podarui, S., Souradeep, T., Gott, J.R. III, Ratra, B., & Vogeley, M.S. 2001, Astrophysical Journal, 559, 9.

20. “The Luminosity Function of Galaxies in SDSS Commissioning Data,” Blanton et al. 2001, Astronomical Journal, 121, 2358.

21. “Galaxy Number Counts from the Sloan Digital Sky Survey Commissioning Data,” Yasuda et al. 2001 Astronomical Journal, 122, 1104.

22. “Spectroscopic Target Selection for the Sloan Digital Sky Survey: The Luminous Red Galaxy Sample,” Eisenstein et al. 2001, Astronomical Journal, 122, 2267.

23. “Detecting Clusters of Galaxies in the Sloan Digital Sky Survey I: Monte Carlo Comparison of Cluster Detection Algorithms,” Kim et al. 2002, Astronomical Journal, 123, 20.

24. “Voids in the PSCz Survey and the Updated Zwicky Catalog,” Hoyle, F., & Vogeley, M.S. 2002, Astrophysical Journal, 566, 641.

25. “The Angular Clustering of Galaxy Pairs,” Infante et al. 2002, Astrophysical Journal, 567, 155.

26. “Two-Dimensional Topology of the 2dF Galaxy Redshift Survey,” Hoyle, F., Vogeley, M.S., & Gott, J.R. III 2002, Astrophysical Journal, 570, 44.

27. “Higher Order Moments of the Angular Distribution of Galaxies from Early SDSS Data,” Szapudi et al. 2002, Astrophysical Journal, 570, 75.

28. “Redshift Space Clustering of Galaxies in Early SDSS Data,” Zehavi et al. 2002, Astrophysical Journal, 571, 172.

29. “The Angular Power Spectrum of Galaxies from Early SDSS Data,” Tegmark et al. 2002, Astrophysical Journal, 571, 191.

30. “Sloan Digital Sky Survey Early Data Release,” Stoughton et al. 2002, Astronomical Journal, 123, 485.

31. “KL Estimation of the Power Spectrum Parameters from the Angular Distribution of Galaxies in Early SDSS Data,” Szalay et al. 2003, Astrophysical Journal, 591, 1.

32. “The 3D Power Spectrum from Angular Clustering of Galaxies in Early SDSS Data,” Dodelson et al. 2002, Astrophysical Journal, 572, 140.

33. “The Angular Correlation Function of Galaxies from Early SDSS Data,” Connolly et al. 2002, Astrophysical Journal 579, 42.

34. “Analysis of Systematic Effects and Statistical Uncertainties in Angular Clustering of Galaxies from Early SDSS Data,” Scranton et al. 2002, Astrophysical Journal, 579, 48.

35. “Spectroscopic Target Selection in the Sloan Digital Sky Survey: The Main Galaxy Sample,” Strauss et al. 2002, Astronomical Journal, 124, 1810.

36. “Three-Dimensional Genus Statistics of Galaxies in the SDSS Early Data Release,” Hikage et al. 2002, Pub. of Astronomical Society of Japan, 54, 707.

37. “Two-Dimensional Topology of the Sloan Digital Sky Survey,” Hoyle, F., Vogeley, M.S., Gott, J.R., Blanton, M., Tegmark, M., & Weinberg, D.H. 2002, Astrophysical Journal, 580, 663.

38. “The Cluster Mass Function from Early SDSS Data: Cosmological Implications,” Bahcall et al. 2003, Astrophysical Journal, 585, 182.

39. “Galaxy Voids in Cold Dark Matter Universes,” Benson, A.J., Hoyle, F., Torres, F., & Vogeley, M.S. 2003, Monthly Notices of the Royal Astronomical Society, 340, 160.

40. “The Galaxy Luminosity Function and Luminosity Density at Redshift z=0.1,” Blanton et al. 2003, Astrophysical Journal, 592, 819.

41. “The Broad-band Optical Properties of Galaxies with Redshifts $0.0 < z < 0.2$,” Blanton et al. 2003, Astrophysical Journal, 594, 186.

42. “Minkowski Functionals of SDSS galaxies I : Analysis of Excursion Sets,” Hikage et al. 2003, Publications of the Astronomical Society of Japan, 55, 911.

43. “The First Data Release of the Sloan Digital Sky Survey,” Abazajian et al. 2003, Astronomical Journal, 126, 2081.

44. “A Catalog of Compact Groups in the SDSS Commissioning Data,” Lee et al. 2003, Astronomical Journal, 127, 1811.

45. “Simulating Voids,” Goldberg, D., & Vogeley, M.S. 2004, Astrophysical Journal, 605, 1.

46. “The Three-Dimensional Power Spectrum of Galaxies from the Sloan Digital Sky Survey,” Tegmark et al. 2004, Astrophysical Journal, 606, 702.

47. “Cosmological Parameters from SDSS and WMAP,” Tegmark et al. 2004, Physical Review D, 69, 103501.

48. “Cosmological Parameters from Eigenmode Analysis of Sloan Digital Sky Survey Redshifts,” Pope et al. 2004, Astrophysical Journal, 607, 655.

49. “Voids in the Two-Degree Field Galaxy Redshift Survey,” Hoyle, F., & Vogeley, M.S. 2004, Astrophysical Journal, 607, 751.

50, “The Second Data Release of the Sloan Digital Sky Survey,” Abazajian et al. 2004, Astronomical Journal, 128, 502.

51. “Physical Evidence for Dark Energy,” Scranton et al. 2003, Phys. Rev. Lett., submitted, preprint arXiv:0307335.

52. “A Map of the Universe,” Gott, J.R. III, Juric, M., Schlegel, D., Hoyle, F., Vogeley, M.S., Tegmark, M., Bahcall, N., & Brinkmann, J. 2005, Astrophysical Journal, 624, 463.

53. “Photometric Properties of Void Galaxies in the Sloan Digital Sky Survey,” Rojas, R., Vogeley, M.S., & Hoyle, F. 2004, Astrophysical Journal, 617, 50.

54. “Luminosity Function of Void Galaxies in the Sloan Digital Sky Survey,” Hoyle, F., Rojas, R., & Vogeley, M. S. 2005, Astrophysical Journal, 620, 618.

55. “The Mass Function of Void Galaxies in the SDSS Data Release 2,” Goldberg, D.M., Jones, T.D., Hoyle, F., Rojas, R.R., Vogeley, M.S., & Blanton, M.R. 2005, Astrophysical Journal, 621, 643.

56. “Spectroscopic Properties of Void Galaxies in the Sloan Digital Sky Survey,” Rojas, R.R., Vogeley, M.S., Hoyle, F., & Brinkmann, J. 2005, Astrophysical Journal, 624, 571.

57. “The Luminosity and Color Dependence of the Galaxy Correlation Function,” Zehavi et al., 2005, Astrophysical Journal, 630, 1.

58. “The Third Data Release of the Sloan Digital Sky Survey,” Abazajian et al. 2005, Astronomical Journal, 129, 1755.

59. “The Luminosity and Color Dependence of the Galaxy Correlation Function,” Zehavi et al. 2005, Astrophysical Journal, 630, 1.

60. “Topology Analysis of the Sloan Digital Sky Survey: I. Scale and Luminosity Dependences,” Park, C., Choi, Y., Vogeley, M.S., Gott, J.R., Kim, J., Hikage, C., Matsubara, T., Park, M., Suto, Y., & Weinberg, D.H. 2005, Astrophysical Journal, 633, 11.

61. “The Fourth Data Release of the Sloan Digital Sky Survey,” Adelman-McCarthy et al. 2006, Astrophysical Journal Supplements, 162, 38.

62. “The Clustering of Low Luminosity AGN,” Constantin, A., & Vogeley, M. S. 2006, Astrophysical Journal, 650, 727.

63. “Cosmological Constraints from the SDSS Luminous Red Galaxies,” Tegmark et al. 2006, Physical Review D, vol. 74, Issue 12, id. 123507.

64. “Internal and Collective Properties of Galaxies in the Sloan Digital Sky Survey,” Choi, Y-Y., Park, C., & Vogeley, M.S. 2007 Astrophysical Journal, 658, 884.

65, “Environmental Dependence of Properties of Galaxies in the Sloan Digital Sky Survey,” Park, C., Choi, Y-Y. Vogeley, M.S., Gott, J.R., & Blanton, M.R. 2007 Astrophysical Journal, 658, 898.

66. “The Shape of the SDSS DR5 Galaxy Power Spectrum,” Percival et al. 2007 Astrophysical Journal, 657, 645.

67. “Measuring the Matter Density Using Baryon Oscillations in the SDSS,” Percival, et al. 2007, Astrophysical Journal, 657, 51.

68. “Genus Topology of Structure in the Sloan Digital Sky Survey: Model Testing,” Gott, J.R., Hambrick, D.C., Vogeley, M.S., Kim, J.,. Park, C., Cen, R., & Nagamine, K, 2008 Astrophysical Journal, 675, 16.

69. “The Fifth Data Release of the Sloan Digital Sky Survey,” Adelman-McCarthy et al. 2007, Astrophysical Journal Supplements, 172, 634.

70. "Analyzing the Impact of Sloan Digital Sky Survey on Astronomical Literature: A Multiple Perspective Approach," Zhang, J., Zhu, W., Chen, Y., Vogeley, M.S., & Chen, C. 2007, in Proceedings of ISSI 2007, edited by Torres-Salinas and Moed. Madrid, Spain. June 25-27, 2007. Vol.II. pp. 964-965.

71. "Delineating the Citation Impact of Scientific Discoveries," Chen, C., Zhang, J., Zhu, W., & Vogeley, M.S. 2007, in IEEE/ACM Joint Conference on Digital Libraries (JCDL2007). June 17-22, 2007. Vancouver, British Columbia, Canada. ACM. pp. 19-28.

72. “Active Galactic Nuclei in Void Regions,” Constantin, A., Hoyle, F., & Vogeley, M.S., 2008, Astrophysical Journal, 673, 715.

73. ``Source Matching in the SDSS and RASS: Which Galaxies are Really X-Ray Sources?" Parejko, J.K., Constantin, A., Vogeley, M.S., & Hoyle, F. 2008, Astronomical Journal, 135, 10.

74. “The Beginning and Evolution of the Universe,” Ratra, B., & Vogeley, M.S. 2007, Publications of the Astronomical Society of the Pacific, 120, 235.

75. “Identifying Thematic Variations in SDSS Research,” Chen, C., Ibekwe-SanJuan, F., Sanjuan, E., & Vogeley, M. S. 2008, 9th Int'l Conference on the Statistical Analysis of Textual Data (JADT2008), pp. 319-330.

76. “The Sixth Data Release of the Sloan Digital Sky Survey,” Adelman-McCarthy et al. 2008, Astrophysical Journal Supplement, 175, 297.

77. “The Aspen-Amsterdam Void Finder Comparison Project,” Colberg, J.M. et al. 2008, Monthly Notices of the Royal Astronomical Society, 387, 933.

78. “The Seventh Data Release of the Sloan Digital Sky Survey,” Abazajian, K.N., et al. 2009, Astrophysical Journal Supplement, 182, 532.

79. “Mapping the Sloan Digital Sky Survey’s Global Impact,” Chen, C., Zhang, J., & Vogeley, M.S. 2009, IEEE Intelligent Systems, 24, 74..

80. “Baryon Acoustic Oscillations in the Sloan Digital Sky Survey Data Release 7 Galaxy Sample,” Percival, W.J., et al. 2010, Monthly Notices of the Royal Astronomical Society, 401, 214.

81. “Cosmological Constraints from the Clustering of the Sloan Digital Sky Survey DR7 Luminous Red Galaxies,” Reid, B.A., et al. 2010, Monthly Notices of the Royal Astronomical Society, 404, 60.

82. “Making Sense of the Evolution of a Scientific Domain: A Visual Analytic Study of the Sloan Digital Sky Survey Research,” Chen, C., Zhang, J., & Vogeley, M.S. 2010, Scientometrics, 83, 669.

83. “Galaxy Clustering Topology in the Sloan Digital Sky Survey Main Galaxy Sample: a Test for Galaxy Formation Models,” Choi, Y-Y., Park, C., Kim, J., Gott, J.R., Weinberg, D.H., Vogeley, M.S., & Kim, S.S. 2010, Astrophysical Journal Supplements, 190, 181.

84, “The Use of Scientific Data: A Content Analysis,” Zhang, J., Chen, C., & Vogeley, M.S. 2010, submitted to IEEE e-Science 2010, preprint arXiv:1007.4602

85. “Scientometrics of Big Science: A Case Study of Research in Sloan Digital Sky Survey,” Zhang, J., Vogeley, M. S., & Chen, C. 2011, Scientometrics, 86(1), 1-14.

86. “Modeling Users’ Data Usage Experiences from Scientific Literature,” Zhang, J., Chen, C., Vogeley, M. S. 2011, Proceedings of HCI International 2011. July 9-14, 2011. Orlando, FL, USA. pp. 337-346.

87. “Visual exploratory analysis of a large volume of SQL log data with the SDSS log viewer,” Zhang, J., Chen, C., Vogeley, M. S., Pan, D., Thakar, A., & Raddick, J. 2012, Visualization and Data Analysis (VDA 2012), SPIE 8294.

88. “Cosmic Voids in Sloan Digital Sky Survey Data Release 7,” Pan, D. C., Vogeley, M.S., Hoyle, F., Choi, Y.-Y., Park, C. 2012, Monthly Notices of the Royal Astronomical Society, 421, 926.

89. “Photometric Properties of Void Galaxies in the Sloan Digital Sky Survey Data Release 7,” Hoyle, F., Vogeley, M. S., & Pan, D. C. 2012, Monthly Notices of the Royal Astronomical Society, 426, 3041.

90. “Mean Spectral Energy Distributions and Bolometric Corrections for Luminous Quasars,” Krawczyk, C.M., Richards, G.T., Mehta, S.S., Vogeley, M.S., et al. 2013, Astrophysical Journal Supplements, 206, 4.

91. “A Topological Analysis of Large Scale Structure Using the CMASS Sample of SDSS-III,” Parihar, P., Vogeley, M.S., Gott, J.R., Choi, Y-Y., Kim, S.S. 2014, Astrophysical Journal, 796, 86.

92. “The HI Mass Function and Velocity Width Function of Void Galaxies in the Arecibo Legacy Fast ALFA Survey,” Moorman, C., Vogeley, M.S., Pan, D.C., Hoyle, F., Hayne, Martha P., Giovanelli, R. 2014, Monthly Notices of the Royal Astronomical Society, 444, 3559.

93. “Are the variability properties of the Kepler AGN light curves consistent with a damped random walk?” Kasliwal, V.P., Vogeley, M.S., Richards, G.T. 2015, Monthly Notices of the Royal Astronomical Society,” 451, 4328.

94. “The Optical Luminosity Function of Galaxies in the SDSS and ALFALFA Surveys,” Moorman, C., Vogeley, M.S., Pan, D.C., Hoyle, F., Haynes, Martha P., Giovanelli, R. 2015, Astrophysical Journal, 810:108.

95. “Do the Kepler AGN Light Curves Need Re-processing?” Kasliwal, V.P., Vogeley, M.S., Richards, G.T., Williams, J., Carini, M.T. 2015, Monthly Notices of the Royal Astronomical Society, 453, 2075.

96. “Spectral Properties of Galaxies in Void Regions,” Liu, C-X., Pan, D.C., Hao, L., Hoyle, F., Constantin, A., Vogeley, M.S. 2015 Astrophysical Journal, 810, 165.

97. “On the Star Formation Properties of Void Galaxies,” Moorman, C., Moreno, J., White, A., Vogeley, M.S., Hoyle, F., Giovanelli, R., Haynes, M.P. 2016, Astrophysical Journal, 831, 118.

98. “Determining the Large-Scale Environmental Dependence of Gas-Phase Metallicity in Dwarf Galaxies,” Douglass, K.A., Vogeley, M.S. 2017, Astrophysical Journal, 834, 186.

99. “Large-Scale Environmental Dependence of the Abundance Ratio of Nitrogen to Oxygen in Blue, Star-forming Galaxies Fainter than L*,” Douglass, K.A., Vogeley, M.S. 2017, Astrophysical Journal, 837, 42.

100. “Extracting Information from AGN Variability,” Kasliwal,V.P., Vogeley, M.S., Richards, G.T. 2017, Monthly Notices of the Royal Astronomical Society, 470, 3027.

101. “Influence of the Void Environment on Chemical Abundances in Dwarf Galaxies and Implications for Connecting Star Formation History and Halo Mass,” Douglass, K.A., Vogeley, M.S., Cen, R. 2018, Astrophysical Journal, 864, 144.

102. “Stochastic Modeling Handbook for Optical AGN Variability,” Moreno, J., Vogeley, M.S., Richards, G.T., Yu, W. 2019, Publications of the Astronomical Society of the Pacific, 131, 063001.

103. Phillipson, R.A., Boyd, P.T., Smale, A.P., Vogeley, M.S. “Complex Variability of Kepler AGN Revealed by Recurrence Analysis,” 2020, Monthly Notices of the Royal Astronomical Society, 497, 3418.

104. “Properties of a Previously Unidentified Instrumental Signature in Kepler/K2 that as Confused for AGN Variability,” Moreno, J., Buttry, R., O’Brien, J., Vogeley, M.S., Richards, G.T., Smith, K.L. 2021, Astronomical Journal, 162, id.232

105. “HST/COS Lyman-alpha Absorbers in Cosmic Voids,” Watson, W.E., Vogeley, M.S. 2022, submitted to Monthly Notices of the Royal Astronomical Society, arXiv:2204.06708

106. “Examining AGN UV/Optical Variability Beyond the Simple Random Walk,” Yu, W., Richards, G.T., Vogeley, M.S., Moreno, J, Graham, M.J. 2022, Astrophysical Journal, 936, id.132

107. **“**Investigating non-linear and stochastic hard X-ray variability of active galactic nuclei using recurrence analysis,” Phillipson, R.A., Vogeley, M.S., Boyd, P.T. 2023, Monthly Notices of the Royal Astronomical Society, 518, 4372

Current “Hirsch index” of refereed articles h=66 (NASA ADS)

Research Notes

R1. “Analysis of Long-term Systematics in Kepler K2,” O’Brien, J.T., Moreno, J., Richards, G.T., Vogeley, M.S. 2018, Research Notes of the American Astronomical Society, 2, 127.

Conference Proceedings

C1. “Clustering Statistics of Two Samples from the CfA Redshift Survey,” Vogeley, M. S., Geller, M. J., & Huchra, J. P. 1991, in Clusters and Superclusters of Galaxies, NATO ASI Proceedings, ed. M. Colless et al.

C2. “Measures of Large-Scale Structure in the CfA Redshift Survey,” Vogeley, M. S., Geller, M. J., Huchra, J. P., Park, C., & Gott, J. R. 1993, in Observational Cosmology, eds. G. Chincarini, A. Iovino, T. Maccacaro, & D. Maccagni, A.S.P. Conference Proceedings, 51, 125.

C3. “Constraints on Cosmological Models from Once and Future Redshift Surveys,” Vogeley, M. S. 1995, in Wide-Field Spectroscopy and the Distant Universe, Proc. of 35th Herstmonceux Conference eds. S. J. Maddox & A. Aragon-Salamanca (World Scientific: Singapore), 142.

C4. “The Power Spectrum of Galaxy Density Fluctuations: Current Results and Improved Techniques,” Vogeley, M. S. 1995, in Clustering in the Universe, Proc. of 30th Rencontres de Moriond, eds. S. Maurogordato, C. Balkowski, C. Tao, & J. Tran Thanh Van (Editions Frontieres: Gif-sur-Yvette Cedex), 13.

C5. “Toward High-Precision Measures of Large-Scale Structure,” Vogeley, M. S. 1998, in The Evolving Universe, ed. D. Hamilton (Kluwer: Dordrecht), 395, preprint arXiv:9805160.

C6. “Voids in Galaxy Redshift Surveys”, Hoyle, F., & Vogeley, M.S. 2001, Proc. of Third International Conference of Laboratoire d'Astrophysique de Marseille, Where is the Matter?, eds. M. Treyer and L. Tresse, preprint arXiv:0110449.

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A2. “Void Statistics of the CfA Redshift Survey,” Vogeley, M.S., Geller, M.J., & Huchra, J.P., 1991, B. A. A. S., 23, 964.

A3. “Power Spectrum Calculated from the CfA Redshift Survey: Limits on Cosmological Models,” Vogeley, M.S. & Park, C. 1991, B. A. A. S., 23, 1395.

A4. “Fluctuations in the Extragalactic Background Light: Analysis of the Hubble Deep Field,” Vogeley, M.S. 1997, B. A. A. S., 29, 1207 (full paper in preprint form in astro-ph/9711209)

A5. “First Results on Galaxy Clustering from Early SDSS Data,” Szalay et al. 2001, B. A. A. S., 198, 97.01

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A7. “Constraints on Optical Extragalactic Background Fluctuations in the Hubble Deep Fields,” Rojas, R., & Vogeley, M.S. 2001, B. A. A. S., 198, 06.07

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A9. “Photometry and Spectroscopy of Void Galaxies,” Rojas, R.R., Vogeley, M.S., & Hoyle, F., B.A.A.S., 202, 4102.

A10. “The Large-Scale Environment of Metal-Poor Galaxies,” Hao, L., Strauss, M.A., Rojas, R.R., & Vogeley, M.S. 2003, B. A. A. S. , 203, 155.06

A11. “Photometry and Spectroscopy of Galaxies in Void Regions of the Sloan Digital Sky Survey,” Rojas, R.R., Vogeley, M.S., & Hoyle, F. 2003, B. A. A. S., 203, 6806

A12. “Beowulf Analysis Symbolic Interface (BASIN),” Goldberg, D.M., McMillan, S., Char, B., MacNeice, P., & Vogeley, M.S. 2003, B. A. A. S., 203, 0411

A13. “The Void Spectrum and Properties of Void Galaxies in the SDSS,” Vogeley, M.S., Hoyle, F., Rojas, R.R., & Goldberg, D.M. 2004, B. A. A. S., 205, 9404.

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A15. “AGN Activity and Galaxy Clustering,” Constantin, A., & Vogeley, M.S. 2005, B. A. A. S., 37, 1408.

A16. “Cosmic Voids,” Vogeley, M.S., 2005 Proceedings of Korean Astronomical Society

A17. “The Spectral Energy Distributions of Normal and Weakly-Active Galaxies,” Parejko, John K., Constantin, A., & Vogeley, M. S. 2006, B. A. A. S., 209.

A18. “The Structure of Cosmic Voids,” Pan, D., Vogeley, M. S., & Hoyle, F. 2007, B. A. A. S., 211

A19. “The Soft X-ray Properties of Ordinary SDSS Galaxies,” Parejko, J. K., Vogeley, M. S., Constantin, A., & Hoyle, F. 2007, B. A. A. S., 211

A20. “Quantifying the Impact of the Sloan Digital Sky Survey: Evolving Patterns of Research Topics and Collaboration,” Zhang, J., Chen, C., Pan, D., & Vogeley, M.S. 2009, B. A. A. S., 41, 422.

A21. “Shapes of Voids in the SDSS,” Pan, D., Hoyle, F., & Vogeley, M.S. 2009, B. A. A. S., 41, 253.

A22. “Hunting for Low Luminosity AGN Using Optical and X-ray Emission,” Parejko, J.K., Vogeley, M.S., Hyde, J.B., Constantin, A., Thornton, R.J., & Hoyle, F. 2009, B. A. A. S., 41, 477.

A23. “The Environments of Bona-Fide Low Luminosity AGN in the Local Universe,” Parejko, J.K., Vogeley, M.S., Constantin, A., Water, J.T., & Gray, A. 2010, B. A. A. S., 42, 597.

A24. “Small Scale Structure of Cosmic Voids,” Pan, D., Vogeley, M.S., & Hoyle, F. 2010, B. A. A. S., 42, 304.

A25. “Structure and Contents of Cosmic Voids: Tests of Cosmology and Gastrophysics,” Pan, D. C., & Vogeley, M. S. 2011, B. A. A. S., 43, 204.

A26. “Structure Function Analysis of AGN Variability using Kepler,” Kasliwal, V.P., Vogeley, M.S., Richards, G.T. 2014, AAS 224, 221.06.

A27. “Gas-Phase Metallicity of Void Dwarf Galaxies,” Douglass, K.A., Vogeley, M.S. 2014, AAS 224, 22.09

A28. “The HI Mass Function and Velocity Width Function of Void Galaxies in the Arecibo Legacy Fast ALFA Survey,” Moorman, C., Vogeley, M.S., Pan, D.C., Hoyle, F., Hayne, Martha P., Giovanelli, R. 2014, AAS 224, 318.08

A29. “Dwarf Galaxies in Voids: Galaxy Luminosity and HI Mass Functions Using SDSS and ALFALFA,” Moorman, C.M., Vogeley, M.S., ALFALFA Collaboration 2015, AAS 225, 212.03

A30. “Accretion Timescales from Kepler AGN,” Kasliwal, V.P., Vogeley, M.S., Richards, G.T. 2015, AAS 225, 221.02

A31. “The Star Formation Properties of Void Galaxies,” Moorman, C., Vogeley, M.S. 2016, AAS 227, 136.09

A32. “Cadence Requirements for AGN Studies with LSST,” Moreno, J., Vogeley, M.S., Richards, G.T., Kasliwal, V.P. 2016, AAS 227, 243.16

A33. “Large-scale Environmental Dependence of Gas-Phase Metallicity in Dwarf Galaxies,” Douglass, K.A., Vogeley, M.S. 2016, AAS 227, 342.30

A34. “Large-scale environmental dependence of chemical abundances in dwarf galaxies and implications for connecting star formation history and halo mass,” Douglass, K.A., Vogeley, M.S. 2017, AAS 229, 123.03

A35. “AGN Variability: Probing Black Hole Accretion,” Moreno, J., O’Brien, J., Vogeley, M.S., Richards, G.T., Kasliwal, V.P. 2017, AAS 229, 250.36

A36. “Simulating a Thin Accretion Disk Using PLUTO,” Phillipson, R., Vogeley, M.S., Boyd, P.T. 2017, AAS HEAD #16, 108.42

A37. “A Global Three-Dimensional Radiation Hydrodynamic Simulation of a Self-Gravitating Accretion Disk,” 2018, Phillipson, R., Vogeley, M.S., McMillan, S., Boyd, P., AAS 231, 244.26

A38. “AGN Accretion Physics in the Time Domain: Survey Cadences, Stochastic Analysis, and Physical Interpretations,” Moreno, J., Vogeley, M.S., Richards, G., O’Brien, J.T., Kasliwal, V. 2018, AAS 231, 250.08

A39. “Extracting Dynamical Behavior of AGN Through Stochastic Analysis,” O’Brien, J.T., Richards, G., Vogeley, M.S., Moreno, J. 2018, AAS 231, 250.32

A40. “Using the Low-Redshift Lyman Alpha Forest to Trace Dark Filaments in Large-Scale Voids,” Tomlinson, J., Vogeley, M.S., Cen, R. 2018, AAS 231, 357.01

A41. “Complex Variability of AGN and XRBs Revealed by Recurrence Analysis,” Phillipson, R., Boyd, P., Smale, A., Vogeley, M.S., McMillan, S. 2019, AAS 233, 243.19

A42. “AGN Variability: Damped Harmonic Oscillator (DHO) model vs. the Damped Random Walk (DRW),” Moreno, J., Vogeley, M.S., Richards, G.T. 2019, AAS 233, 431.02

A43. “Investigating Non-linear and Stochastic Hard X-ray Variability of Active Galactic Nuclei,” Phillipson, R.A., Vogeley, M.S., Boyd, P., 2021, AAS 237, 226.09

A44. “Examining AGN UV/Optical Variability Beyond the Simple Random Walk,” Yu, W., Richards, G.T., Vogeley, M.S., Moreno, J, Graham, M.J. 2022, AAS 240, 129.01

A45. “Quantifying the Active Galactic Nuclei Fraction in Cosmic Voids via Mid-Infrared Variability,” Aradhey, A.S., Constantin, A., Vogeley, M.S., Douglass, K.A. 2024, AAS 242, 341.04

Other Publications/Presentations

“Mapping the Universe: Space, Time, and Discoveries,” Chen, C., Zhang, J., Vogeley, M. S., Gott, J. R., Juric, M., & Kershner, L. 2007, in Places & Spaces: Mapping Science exhibit.

Awarded *Semifinalist Honor* in the 2008 International Science & Engineering Visualization Challenge (NSF and the journal Science) for the submission entitled "Mapping the Universe" by Chen, C., Vogeley, M.S., Zhang, J., Pan, D., Parejko, J., Gott, J.R., & Juric, M.

"Mapping the Universe: Space, Time, and Discoveries," Chen, C., Zhang, J., Vogeley, M. S., Gott, J. R., Juric, M., & Kershner, L. 2010, in Atlas of Science, ed. K. Boerner, (MIT Press).

Research students advised
Ph.D. students:
Randall R. Rojas (Ph.D. 2004 "Photometric and Spectroscopic Properties of Void Galaxies in the Sloan Digital Sky Survey")
John Parejko (Ph.D. 2010 "Hosts and Environments of Low Luminosity Active Galaxies in the Local Universe")
Danny Pan (Ph.D. 2011 "Cosmic Voids in the Sloan Digital Sky Survey")
Jian Zhang (Ph.D. 2011 in College of IST, co-advised, thesis committee)
Vishal Kasliwal (Ph.D. 2015 "Probing AGN Accretion Physics through AGN Variability: Insights from Kepler")
Crystal Moorman (Ph.D. 2015 "Dwarf Galaxies in Voids: Luminosity, Gas, and Star Formation Properties")
Kelly Douglass (Ph.D. 2017 "Observational Evidence of the Large-scale Environmental Influence on Dwarf Galaxy Evolution")
Jackeline Moreno (Ph.D. 2019 "The Optical Variability of Active Galactic Nuclei: A Probe of Black Hole Accretion Physics")
Rebecca Phillipson (Ph.D. 2020, "Investigating Nonlinear Variability of Accretion Disks around Compact Objects," co-advised with Steve McMillan)
William Watson (Ph.D.student, "Large-Scale Structure and IGM Absorbers")
Keri Heuer (current Ph.D. student, "Chaos & Complexity in the Variable Accretion Flows of Changing-Look Active Galactic Nuclei," co-advised with Gordon Richards)
Sam Kumagai (current Ph.D. student, "DeepVoid: A Physics Aware Void Detector")

Other graduate students:
Henry Adair (current MS student)
Virginia Price (graduate student project, oral qualifying exam 2017
Michael French (graduate student project Summer 2006, oral qualifying exam)
Samantha Osmer (graduate student project Spring 2004, qualifying exam project 2005)
Heather Rave (graduate student project Summer, Fall 2003)
Kelli Corrado (graduate student project Summer, Fall 2001)

Undergraduate Students:
Christina Ludwig (B.S. thesis 2024)
Gavin Ashman (B.S. thesis 2024)
Helen Rosenbrien (B.S. thesis 2023)
Natalya Pletskova (co-op Spring-Summer 2022, B.S. thesis 2023)
Maya Levitt (STAR project Summer 2022)

Nate Santana (B.S. thesis 2022)
Eric Teunissen-Bermeo (co-op Spring-Summer 2020, B.S. thesis 2021)
Jonathan Thornton (co-op Spring-Summer 2019, B.S. thesis 2020)
Ethan Konyk (STAR project Summer 2018)
Joseph Tomlinson (B.S. thesis 2018)
James Howley (B.S. thesis 2018)
Lee Webster (STAR project Summer 2017)
Joseph Tomlinson (co-op Spring-Summer 2016, co-op Spring-Summer 2017)
Charles Unruh (B.S. thesis 2017)
Danielle Schneider (B.S. thesis 2017)
Jinfu Dai (B.S. thesis 2015)
Brandon Rupert (STAR project Summer 2012, B.S. thesis 2015)
Salvatore Zerbo (STAR project Summer 2015)
Brean Prefontaine (STAR project Summer 2014)
Amanda White (B.S. thesis 2011, STAR project Summer 2008, research assistant 2008-2010)
Robyn Smith (STAR project Summer 2011)
Michael Jewell (STAR project Summer 2010)
W. Bailey McCreery (B.S. thesis 2007)
Henry Winterbottom (co-advised B.S. thesis 2003)
Daniel Fitzgerald (B.S. thesis 2002)
Greg Byrne (undergraduate co-op research Spring 2002)
Ernest Mamikonyan (undergraduate co-op research supported by NSF REU, Spring, Summer 2001)

Service Activities

Department Service

Graduate Admissions Committee (2022-)
Graduate Academic Committee (2020-)
Faculty search committee for big data physics faculty (2021-2022)
Associate Department Head for Graduate Studies (2015-2020)
Chair, Graduate Admissions Committee (2016-2019)
Chair, Graduate Curriculum Committee (2016-2019)
Director of Graduate Studies (2006-2015)
Program and Alignment Review committee (2013)
Faculty Search Committee chair for new astrophysics faculty (2005-2006)
Director of Physics Graduate Admissions (2003-2005)
Webmaster/administrator of Physics web site (1999-2005)
Kaczmarczik Lecture organizer (1999-2004, 2012)
Graduate Committee (2001-2005, 2006-2007), co-chair 2003-2005, chair 2006
Strategic Planning Committee (2003)
Colloquium Committee (2002-2004)
Faculty Search Committee for new astrophysics faculty (2000-2001)
Graduate Orientation Program, lead organizer and lecturer (2002-2005, 2007-2019)
Undergraduate Recruiting Open Houses
Proposed Undergraduate Advising Program (implemented 2001)

College Service

College of Arts and Sciences Caucus (2020-2023)
College of Arts and Sciences Graduate Committee (2002-2019, Chair 2008-2010)
Strategic Planning Committee (ad hoc) 2011-2012

University Service

Sabbatical Review Committee, elected by CoAS (2020-), Chair (2023-)
Senate Committee on Faculty Affairs (2023-)
Tenure Appeals Committee, appointed by President (2016)
Search Committee for Dean of Engineering (2010-2011, 2011-2012)
5-year Review Committee for Dean Selcuk Guceri (2009-2010)
5-year Review Committee for Dean Mark Greenberg (2007-2008)
Honors College Advisory Committee (2004-2005, 2006-2007)
Honors Program graduate study panel (2000-2005, 2006-2007)
A.J. Drexel Scholarship interviews (2000, 2004)

Community and Outreach

Faculty Fellow, Collegium Institute (University of Pennsylvania; 2018-).
Panelist for Collegium Institute (University of Pennsylvania) workshop "Science as a Path to Wonder: From the Darkness of Space to the Light of Christ" 2024
Discussion leader at Magi Institute (University of Pennsylvania) "What is Life?" Summer Seminar 2022
Discussion leader at Magi Institute (University of Pennsylvania) "Creation Ex Nihilo" Summer Seminar 2018.
Invited lectures presented at Magi Institute "Space, Time, and Eternity" Summer Seminar 2019.
Lectures at Delaware Valley Amateur Astronomers (2002) and Bucks-Mont Astronomers meetings (2004)
Science fair projects advised for two St. Basil's Academy students (2002)