CURRICULUM VITAE OF MARIANGELA BERNARDI
(August 2019)
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Date/Place of birth: 24 August 1971, Sandrigo, Italy

FACULTY APPOINTMENTS:
July 2010 - Associate Professor  University of Pennsylvania
Jan 2005 - June 2010 Assistant Professor  University of Pennsylvania

RESEARCH EXPERIENCE:
Mar 2004 - Dec 2004 Research Associate  University of Pittsburgh
Mar 2002 - Feb 2004 Research Associate  Carnegie Mellon University
Jan 2000 - Feb 2002 Research Associate  University of Chicago

HIGHER EDUCATION:
Dec. 1999  Ph.D. in Astrophysics  (Magna cum Laude)  L.M.U. Munich
Dec. 1995  Laurea in Astronomy  (Magna cum Laude)  U. Padova

RESEARCH ACCOMPLISHMENTS:
According to the NASA Astrophysics Data System, I have:

• 130 published papers with a total of 26,000+ citations;

• 27 first author papers with 2700+ citations of which 10 have more than 145 citations/paper;

• 74 papers where I am one of the first three authors or the leading authors are my students/postdocs (6000+ citations);

• h-index of 61.
REFEREED PUBLICATIONS:
Publications are divided in two sets: Major Role and Contributed.
In the following, underlined names refer to students, postdocs and visitors while in my group.

MAJOR ROLE:

1. Galaxy properties as revealed by MaNGA II. Differences in stellar populations of slow and fast rotator ellipticals and dependence on environment
   **Bernardi, M.**, Dominguez-Sanchez, H., Brownstein, J. R., Drory, N. & Sheth, R. K. 2019, MNRAS, in press (arXiv:1904.11996)

2. Galaxy properties as revealed by MaNGA. I. Constraints on IMF and \(M_*/L\) gradients in ellipticals
   Dominguez-Sanchez, H., **Bernardi, M.**, Brownstein, J. R., Drory, N. & Sheth, R. K. 2019, MNRAS, in press (arXiv:1904.11992)

3. Constraining black hole-host galaxy scaling relations from the large-scale clustering of Active Galactic Nuclei: Implications for the mean radiative efficiency of supermassive black holes
   Shankar, F., Allevato, V., **Bernardi, M.**, Marsden, C., Lapi, A., Menci, N., Grylls, P. J., Zanisi, L., Moreno, J., Krumpe, M. & Sheth, R. K. 2019, Nature Astronomy, revised

4. Radial Acceleration Relation between Baryons and Dark or Phantom Matter in the Super-critical Acceleration Regime of Nearly Spherical Galaxies
   Chae, K.-H., **Bernardi, M.**, Sheth, R. K. & I. T. Gong 2019, ApJ, 877, 18 – 40

5. Modeling Nearly Spherical Pure-Bulge Galaxies with a Stellar Mass-to-Light Ratio Gradient under the \(\Lambda\)CDM and MOND Paradigms: II. The Orbital Anisotropy of Slow Rotators within the Effective Radius
   Chae, K.-H., **Bernardi, M.**, Sheth, R. K. 2019, ApJ, 874, 41 – 60

6. Black hole scaling relations of active and quiescent galaxies: Addressing selection effects and constraining virial factors
   Shankar, F., **Bernardi, M.**, Richardson, K., Marsden, C., Sheth, R. K., Allevato, V., Graziani, L., Mezcua, M., Ricci, F., Penny, S. J., La Franca, F. & Pacucci, F. 2019, MNRAS, 485, 1278 – 1292

7. Transfer learning for galaxy morphology from one survey to another
   Dominguez-Sanchez, H., Huertas-Company, M., **Bernardi, M.**, Kaviraj, S., Fischer, J.-L. et al. (and 54 co-authors) 2019, MNRAS, 484, 93 – 100

8. SDSS-IV MaNGA PyMorph Photometric and Deep Learning Morphological Catalogues and implications for bulge properties and stellar angular momentum
   Fischer, J.-L., Dominguez-Sanchez, H. & **Bernardi, M.** 2019, MNRAS, 483, 2057 – 2077

9. A statistical semi-empirical model: satellite galaxies in groups and clusters
   Grylls, P. J., Shankar, F., Zanisi, L. & **Bernardi, M.** 2019, MNRAS, 483, 2506 – 2523
10. Modeling Nearly Spherical Pure-Bulge Galaxies with Stellar Mass-to-Light Ratio Gradient under ΛCDM and MOND Paradigms: I. Methodology, Dynamical Stellar Mass and Fundamental Mass Plane
  Chae, K.-H., **Bernardi, M.**, & Sheth, R. K. 2018, ApJ, 860, id. 81, 17

11. A catalog of polychromatic bulge-disk decompositions of ∼ 17,600 galaxies in CANDELS
  Dimauro, P., Huertas-Company, M., Daddi, E., Perez-Gonzalez, P. G., **Bernardi, M.**, Barro, G. Buitrago, F., Caro, F., Cattaneo, A., Dominguez-Sánchez, H., Faber, S. M.; Häusler, B., Kocevski, D. D., Koekemoer, A. M., Koo, D. C., Lee, C. T., Mei, S., Margalef-Bentabol, B., Primack, J., Rodriguez-Puebla, A., Salvato, M., Shankar, F. & Tuccillo, D. 2018, MNRAS, 478, 5410 – 5426

12. M∗/L gradients driven by IMF variation: Large impact on dynamical stellar mass estimates
  **Bernardi, M.**, Sheth, R. K., Dominguez-Sanchez, H., Fischer, J.-L., Chae, K.-H., Huertas-Company, M. & Shankar, F. 2018, MNRAS, 477, 2560 – 2571

13. Improving galaxy morphologies for SDSS with Deep Learning: GZOO classification scheme and T-Type catalogues
  Dominguez-Sanchez, H., Huertas-Company, M., **Bernardi, M.** & Fischer, J.-L. 2018, MNRAS, 476, 3661 – 3676

14. Stellar mass functions and implications for a variable IMF
  **Bernardi, M.**, Sheth, R. K., Fischer, J.-L., Meert, A., Chae, K.-H., Dominguez-Sanchez, H., Huertas-Company, M., Shankar, F. & Vikram, V. 2018, MNRAS, 475, 757 – 771

15. Comparing PyMorph and SDSS photometry. II. The differences are more than semantics and are not dominated by intracluster light
  **Bernardi, M.**, Fischer, J.-L., Sheth, R. K., Meert, A., Huertas-Company, M., Shankar, F. & Vikram, V. 2017, MNRAS, 468, 2569 – 2581

16. Comparing PyMorph and SDSS photometry. I. Background sky and model fitting effects
  Fischer, J.-L., **Bernardi, M.** & Meert, A. 2017, MNRAS, 467, 490 – 500

17. Selection bias in dynamically-measured supermassive black hole samples: Scaling relations and correlations between residuals in semi-analytic galaxy formation models
  Barausse, E., Shankar, F., **Bernardi, M.**, Dubois, Y. & Sheth, R. K. 2017, MNRAS, 468, 4782 – 4791

18. The high mass end of the stellar mass function: Dependence on stellar population models and recent agreement on fits to the light profile
  **Bernardi, M.**, Meert, A., Sheth, R. K., Fischer, J.-L., Huertas-Company, M., Maraston, C., Shankar, F. & Vikram, V. 2017, MNRAS, 467, 2217 – 2233

19. Selection bias in dynamically-measured super-massive black hole samples: dynamical masses and dependence on Sérsic index
  Shankar, F., **Bernardi, M.** & Sheth, R. K., MNRAS, 2017, 466, 4029 – 4039
20. Mass assembly and morphological transformations since $z \sim 3$ from CANDELS
Huertas-Company, M., Bernardi, M., Perez-Gonzalez, P. G., Barro, G., Daddi, E., Dimauro, P., Faber, S., Koo, D., Mei, S. & Shankar, F. 2016, MNRAS, 462, 4495 – 4516

21. Selection bias in dynamically-measured super-massive black hole samples: consequences for pulsar timing arrays
Sesana, A., Shankar, F., Bernardi, M., & Sheth, R. K. 2016, MNRAS, 463, L6 – L11

22. Selection bias in dynamically-measured super-massive black holes: its consequences and the quest for the most fundamental relation
Shankar, F., Bernardi, M., Sheth, R. K., Ferrarese, L., Graham, A. W., Savorgnan, G., Allevato, V., Marconi, A., Läsker, R. & Lapi, A. 2016, MNRAS, 460, 3119 – 3142

23. The massive end of the luminosity and stellar mass functions and clustering from CMASS to SDSS: Evidence for and against passive evolution
Bernardi, M., Meert, A., Sheth, R. K., Huertas-Company, M., Maraston, C., Shankar, F. & Vikram, V. 2016, MNRAS, 455, 4122 – 4135

24. A Catalogue of Two-Dimensional Photometric Decompositions in the SDSS-DR7 Spectroscopic Main Galaxy Sample: Extension to g- and i-Bands
Meert, A., Vikram, V. & Bernardi, M. 2016, MNRAS, 455, 2440 – 2452

25. A Catalogue of Two-Dimensional Photometric Decompositions in the SDSS-DR7 Spectroscopic Main Galaxy Sample: Preferred Models and Systematics
Meert, A., Vikram, V. & Bernardi, M. 2015, MNRAS, 446, 3943–3974

26. Systematic effects on the size-luminosity relation: dependence on model fitting and morphology
Bernardi, M., Meert, A., Vikram, V., Huertas-Company, M., Mei, S., Shankar, F. & Sheth, R.K. 2014, MNRAS, 443, 874–897

27. Modelling mass distribution in elliptical galaxies: mass profiles and their correlation with velocity dispersion profiles
Chae, K., Bernardi, M., & Kravtsov, Andrey V. 2014, MNRAS, 437, 3670–3687

28. The massive end of the luminosity and stellar mass functions: Dependence on the fit to the light profile
Bernardi, M., Meert, A., Sheth, R.K., Vikram, V., Huertas-Company, M., Mei, S. & Shankar, F. 2013, MNRAS, 436, 697–704

29. Simulations of single and two-component galaxy decompositions for spectroscopically selected galaxies from the Sloan Digital Sky Survey
Meert, A., Vikram, V. & Bernardi, M. 2013, MNRAS, 433, 1344–1361

30. No Evidence for a Dependence of the Mass-Size Relation of Early-type Galaxies on Environment in the Local Universe
Huertas-Company, M., Shankar, F., Mei, S., Bernardi, M., Aguerri, J.A.L., Meert, A. & Vikram, V. 2013, ApJ, 779, 29–38
31. Size Evolution of Spheroids in a Hierarchical Universe
Shankar, F., Marulli, F., Bernardi, M., Mei, S., Meert, A. & Vikram, V. 2013, MNRAS, 428, 109–128

32. Semi-empirical catalog of early-type galaxy-halo systems: dark matter density profiles, halo contraction and dark matter annihilation strength
Chae, K., Kravtsov, A. V., Frieman, J. A. & Bernardi, M. 2012, JCAP, 11, article id. 004

33. Plane fundamentals of fundamental planes: Analytics and algorithms
Sheth, R. K. & Bernardi, M. 2012, MNRAS, 422, 1825–1834

34. Black Holes in Pseudobulges: demography and models
Shankar, F., Marulli, F., Bernardi, M., Mathur, F. & Bournaud, F. 2012, A&A, 540, 23–31

35. Evidence of major dry mergers at $M_\ast > 2 \times 10^{11} M_\odot$ from curvature in early-type galaxy scaling relations?
Bernardi, M., Roche, N., Shankar, F. & Sheth, R. K. 2011, MNRAS, 412, L6–L10

36. Curvature in the color-magnitude relation but not in color-$\sigma$: Major dry mergers at $M_\ast > 2 \times 10^{11} M_\odot$?
Bernardi, M., Roche, N., Shankar, F. & Sheth, R. K. 2011, MNRAS, 412, 684–704

37. Revisiting the Hubble sequence in the SDSS DR7 spectroscopic sample: a publicly available bayesian automated classification
Huertas-Company, M., Aguerri, J. A. L, Bernardi, M., Mei, S. & Sánchez Almeida, J. 2011, A&A, 525, A157 (1–13)

38. The inner structure of very massive elliptical galaxies: implications for the inside-out formation mechanism of $z \sim 2$ galaxies
Tiret, O., Salucci, P., Bernardi, M., Maraston, C. & Pforr, J. 2011, MNRAS, 411, 1435–1444

39. Cosmic Evolution of Size and Velocity Dispersion for Early-type Galaxies
Fan, L., Lapi, A., Bressan, A., Bernardi, M., De Zotti, G. & Danese, L. 2010, ApJ, 718, 1460–1475

40. Colour Gradients and Colour-Magnitude Relation of Brightest Cluster Galaxies compared to E/S0 Galaxies: Implications for their formation
Roche, N., Bernardi, M. & Hyde, J. B. 2010, MNRAS, 407, 1231–1244

41. Further constraining galaxy evolution models through the Size Function of SDSS Early-type galaxies
Shankar, F., Marulli, F., Bernardi, M., Boylan-Kolchin, M., Dai, X. & Khochfar, S., 2010, MNRAS, 405, 948–960

42. The role of environment on the formation of early-type galaxies
Rogers, B., Ferreras, I., Pasquali, A., Bernardi, M., Lahav, O. & Kaviraj, S. 2010, MNRAS, 405, 329–339
43. Galaxy luminosities, stellar masses, sizes, velocity dispersions as a function of morphological type
   Bernardi, M., Shankar, F., Hyde, J. B., Mei, S., Marulli, F. & Sheth, R. K. 2010, MNRAS, 404, 2087–2122

44. Sizes and ages of SDSS ellipticals: Comparison with hierarchical galaxy formation models
   Shankar, F., Marulli, F., Bernardi, M., Dai, X., Hyde, J. B. & Sheth, R. K. 2010, MNRAS, 403, 117–128

45. The age dependence of the size-stellar mass relation and some implications
   Shankar, F. & Bernardi, M., 2009, MNRAS, 396, L76–L80

46. Spectral-based $k$-corrections and implications for the colour-magnitude relation of E/S0s and its evolution
   Roche, N., Bernardi, M. & Hyde, J. B. 2009, MNRAS, 398, 1549–1562

47. Evolution in the structural properties of early-type brightest cluster galaxies at small lookback time and dependence on the environment
   Bernardi, M. 2009, MNRAS, 395, 1491–1506

48. Curvature in the scaling relations of early-type galaxies
   Hyde, J. B. & Bernardi, M. 2009, MNRAS, 394, 1978–1990

49. The luminosity and stellar mass Fundamental Plane of early-type galaxies
   Hyde, J. B. & Bernardi, M. 2009, MNRAS, 396, 1171–1185

50. A search for the most massive galaxies. II. Structure, environment and formation
   Bernardi, M., Hyde, J. B., Fritz, A., Sheth, R. K., Gebhardt, K. & Nichol, R. C. 2008, MNRAS, 391, 1191–1209

51. A search for the most massive galaxies. III. Surface brightness profiles and structural properties from HST images
   Hyde, J. B., Bernardi, M., Fritz, A., Sheth, R. K. & Nichol 2008, MNRAS, 391, 1559–1576

52. The evolution of the $M_{BH}−\sigma$ relation inferred from the age distribution of local early-type galaxies and AGN evolution
   Shankar, F., Bernardi, M. & Haiman, Z. 2008, ApJ, 694, 867–878

53. In search of the largest velocity dispersion galaxies using the Hobby-Eberly Telescope
   Salviander, S., Shields, G. A., Gebhardt K., Bernardi, M. & Hyde, J. B. 2008, ApJ, 687, 828–834

54. Decoding the spectra of SDSS early-type galaxies: new indicators of age and recent star formation
   Rogers, B., Ferreras, I., Lahav, O., Bernardi, M., Sugata, K., & Sukyoung K. Y. 2007, MNRAS, 382, 750–760

55. The $\sigma – L$ correlation in Nearby Early-Type Galaxies
   Bernardi, M. 2007, AJ, 133, 1954–1961
56. Selection bias in the $M_\bullet - \sigma$ and $M_\bullet - L$ correlations and its consequences
**Bernardi, M.**, Sheth, R. K., Tundo, E., & Hyde, J. B. 2007, ApJ, 660, 267–275

57. On the inconsistency between the black hole mass function inferred from $M_\bullet - \sigma$ and $M_\bullet - L$ correlations
Tundo, E., **Bernardi, M.**, Hyde, J. B., Sheth, R. K., & Pizzella, A. 2007, ApJ, 663, 53–60

58. The ages, metallicities and star formation histories of SDSS early-type galaxies
Jimenez, R., **Bernardi, M.**, Haiman, Z., Panter, B., & Heavens, A. F. 2007, ApJ, 669, 947–951

59. Inferring the cosmic evolution of quasars from the age distribution of local early-type galaxies
Haiman, Z., Jimenez, R., & **Bernardi, M.** 2007, ApJ, 658, 721–730

60. The luminosities, sizes and velocity dispersions of Brightest Cluster Galaxies: Implications for formation history
**Bernardi, M.**, Hyde, J. B., Sheth, R. K., Miller, C. J., & Nichol, R. C. 2007, AJ, 133, 1741–1755

61. A search for the most massive galaxies: Double Trouble?
**Bernardi, M.**, Sheth, R. K., Nichol, R. C. et al. 2006, AJ, 131, 2018–2034

62. Evolution and environment of early-type galaxies
**Bernardi, M.**, Nichol, R. C., Sheth, R. K., Miller, C. J. & Brinkmann, J. 2006, AJ, 131, 1288–1317

63. Colors, magnitudes and velocity dispersions in early-type galaxies: Implications for galaxy ages and metallicities
**Bernardi, M.**, Sheth, R. K., Nichol, R. C., Schneider, D. P. & Brinkmann, J. 2005, AJ, 129, 61–72

64. Redshift-Distance Survey of Early-Type Galaxies: Spectroscopic Data
Wegner, G., **Bernardi, M.**, Willmer, C. N. A., da Costa, L. N., Alonso, M. V., Pellegrini, P. S., & Maia, M. A. G. 2004, AJ, 126, 2268–2280

65. The quasar epoch and the stellar ages of early-type galaxies
Cattaneo, A. & **Bernardi, M.** 2003, MNRAS, 344, 45–52

66. The velocity dispersion function of early-type galaxies
Sheth, R. K., **Bernardi, M.**, Schechter, P. et al. 2003, ApJ, 594, 225–231

67. Early-type galaxies in the SDSS. I. The sample
**Bernardi, M.**, Sheth, R. K., Annis J. et al. 2003, AJ, 125, 1817–1848

68. Early-type galaxies in the SDSS. II. Correlations between observables
**Bernardi, M.**, Sheth, R. K., Annis J. et al. 2003, AJ, 125, 1849–1865

69. Early-type galaxies in the SDSS. III. The Fundamental Plane
**Bernardi, M.**, Sheth, R. K., Annis J. et al. 2003, AJ, 125, 1866–1881
70. Early-type galaxies in the SDSS. IV. Colors and chemical evolution
   **Bernardi, M.,** Sheth, R. K., Annis J. et al. 2003, AJ, 125, 1882–1896

71. Redshift-distance Survey of Early-type Galaxies: Circular Aperture Photometry
   Alonso, M. V., **Bernardi, M.,** da Costa, L. N., Wegner, G., Willmer, C. N. A.,
   Pellegrini, P. S., & Maia, M. A. G. 2003, AJ, 125, 2307–2324

72. A feature at \( z \sim 3.2 \) in the evolution of the Ly\( \alpha \) forest optical depth
   **Bernardi, M.,** Sheth, R. K., Subbarao M. et al. 2003, AJ, 125, 32–52

73. Detection of He II reionization in the SDSS quasar sample
   Theuns, T., **Bernardi, M.,** Frieman, J., Hewett, P., Schaye, J., Sheth, R. K., &
   Subbarao M. 2002, ApJ Letters, 574, 111–114

74. Redshift-distance Survey of Early-type Galaxies. I. The ENEARc Cluster Sample
   **Bernardi, M.,** Alonso, M. V., da Costa, L. N., Willmer, C. N. A., Wegner, G.,
   Pellegrini, P. S., Rité, C., & Maia, M. A. G. 2002, AJ, 123, 2990–3017

75. Redshift-distance Survey of Early-type Galaxies. II. The Dn-\( \sigma \) Relation
   **Bernardi, M.,** Alonso, M. V., da Costa, L. N., Willmer, C. N. A., Wegner, G.,
   Pellegrini, P. S., Rité, C., & Maia, M. A. G. 2002, AJ, 123, 2159–2182

76. Sloan Digital Sky Survey: Early Data Release
   Stoughton, C., Lupton, R. H., **Bernardi, M.** et al. 2002, AJ, 123, 485–548

77. Large-scale power spectrum and structures from the ENEAR galaxy peculiar velocity
catalogue
   Zaroubi, S., **Bernardi, M.,** da Costa, L. N., Hoffman, Y., Alonso, M. V., Wegner, G.,
   Willmer, C. N. A., & Pellegrini, P. S. 2001, MNRAS, 326, 375–386

78. Toward an Alternative Way of Looking at Elliptical Galaxies: Case Studies for NGC
   4649 and NGC 7097
   De Bruyne, V., Dejonghe, H., Pizzella, A., **Bernardi, M.,** and Zeilinger, W. W. 2001,
   ApJ, 546, 903–915

79. Comparison of the ENEAR peculiar velocities with the PSCz gravity field
   Nusser, A., da Costa, L. N., Branchini, E., **Bernardi, M.,** Alonso, M. V., Wegner,
   G., Willmer, C. N. A., & Pellegrini, P. S. 2001, MNRAS, 320, 21–24

80. Redshift-Distance Survey of Early-Type Galaxies. I. Sample Selection, Properties, and
    Completeness
    da Costa, L. N., **Bernardi, M.,** Alonso, M. V., Wegner, G., Willmer, C. N. A.,
    Pellegrini, P. S., Rité, C., & Maia, M. A. G. 2000, AJ, 120, 95–109

81. ENEAR Redshift-Distance Survey: Cosmological Constraints
   Borgani, S., **Bernardi, M.,** da Costa, L. N., Wegner, G., Alonso, M. V., Willmer, C.
   N. A., Pellegrini, P. S., & Maia, M. A. G. 2000, ApJ Letters, 537, 1–4

82. Redshift-Distance Survey of Early-Type Galaxies: Dipole of the Velocity Field
    da Costa, L. N., **Bernardi, M.,** Alonso, M. V., Wegner, G., Willmer, C. N. A.,
    Pellegrini, P. S., Maia, M. A. G., & Zaroubi, S. 2000, ApJ Letters, 537, 81–84
83. Cluster versus Field Elliptical Galaxies and Clues on Their Formation

Bernardi, M., Renzini, A., da Costa, L. N., Wegner, G., Alonso, M. V., Pellegrini, P. S., Rité, C., & Willmer, C. N. A. 1998, ApJ Letters, 508, 143–146

CONTRIBUTED:

84. The Hubble Sequence at \( z \sim 0 \) in the IllustrisTNG simulation with deep learning

Huertas-Company, M., Rodriguez-Gomez, V., Nelson, D., Pillepich, A., Bernardi, M., Dominguez-Sanchez, H., Genel, S., Pakmor, R., Snyder, G. F. & Vogelsberger, M 2019, MNRAS, in press (arXiv:1903.07625)

85. The structural properties of classical bulges and discs from \( z \sim 2 \)

Dimauro, P., Huertas-Company, M., Daddi, E., Pérez-González, P. G., Bernardi, M. et al. (and 17 co-authors) 2019, MNRAS, in press (arXiv:1902.04089)

86. The Fifteenth Data Release of the Sloan Digital Sky Surveys: First Release of MaNGA-derived Quantities, Data Visualization Tools, and Stellar Library

Aguado, D. S. et al. 2019, ApJS, 240, id. 23, 25

87. SDSS-IV MaNGA: The Formation Sequence of S0 Galaxies

Fraser-McKelvie, A., Aragon-Salamanca, A., Merrifield, M., Tabor, M., Bernardi, M., Drory, N., Parikh, T. & Argudo-Fernández, M. 2018, MNRAS, 481, 5580 – 5591

88. Deep Learning Identifies High-z Galaxies in a Central Blue Nugget Phase in a Characteristic Mass Range

Huertas-Company, M., Primack, J. R., Dekel, A., Koo, D. C., Lapiner, S., Ceverino, D., Simons, R. C., Snyder, G. F., Bernardi, M., Chen, Z., Dominguez-Sanchez, H., Lee, C. T., Margalef-Bentabol, B. & Tuccillo, D. 2018, ApJ, 858, id. 114, 17

89. The Fourteenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the extended Baryon Oscillation Sky Survey and from the second phase of the Apache Point Observatory Galactic Evolution Experiment

Abolfathi, B. et al. 2018, ApJS, 235, id. 42, 19

90. Revisiting the bulge-halo conspiracy II: Towards explaining its puzzling dependence on redshift

Shankar, F., Sonnenfeld, A., Grylls, P., Zanisi, L., Nipoti, C., Chae, K., Bernardi, M., Enrico Petrillo, C., Huertas-Company, M., Mamon, G. A. & Buchan, S. 2018, MNRAS, 475, 2878 – 2890

91. Revisiting the bulge-halo conspiracy I: Dependence on galaxy properties and environment

Shankar, F., Sonnenfeld, A., Mamon, G. A., Chae, K., Gavazzi, R., Treu, T. Diemer, B., Nipoti, C., Buchan, S., Bernardi, M., Sheth, R. K. & Huertas-Company, M. 2017, ApJ, 840, 34 – 56

92. Sloan Digital Sky Survey IV: Mapping the Milky Way, Nearby Galaxies and the Distant Universe

Blanton, M. R. et al. 2017, AJ, 154, 28 – 63
93. A catalog of visual-like morphologies in the 5 CANDELS fields using deep-learning
Huertas-Company, M., Gravet, R., Cabrera-Vives, G., Perez-Gonzalez, P. G., Kartaltepe, J., Barro, G., **Bernardi, M.**, Mei, S., Shankar, F., Dimauro, P., Bell, E. F., Kocevski, Koo, D., Lotz, J., Faber, S. & McIntosh, D. 2015, ApJS, 221, 23 – 49

94. The morphologies of massive galaxies from $z \sim 3$ - witnessing the 2 channels of bulge growth
Huertas-Company, M., Perez-Gonzalez, P. G., Mei, S., Shankar, F., **Bernardi, M.**, Daddi, E., Barro, G., Cabrera Vives, G. F., Dimauro, P. & Gravet, R. 2015, ApJ, 809, 95 – 111

95. Avoiding Progenitor Bias: The Structural and Mass Evolution of Brightest Group and Cluster Galaxies in Hierarchical Models since $z \sim 1$
Shankar, F., Buchan, S., Rettura, A., Bouillot, V. R., Moreno, J., Licitra, R., **Bernardi, M.**, Huertas-Company, M., Mei, S., Ascaso, B., Sheth, R. K., Delaye, L. & Raichoor, A. 2015, ApJ, 802, 73–82

96. On the Intermediate-redshift Central Stellar Mass-Halo Mass Relation, and Implications for the Evolution of the Most Massive Galaxies Since $z \sim 1$
Shankar, F., Guo, H., Bouillot, V., Rettura, A., Meert, A., Buchan, S., Kravtsov, A., **Bernardi, M.**, Sheth, R.; Vikram, V., Marchesini, D., Behroozi, P., Zheng, Z., Maraston, C., Ascaso, B., Lemaux, B. C., Capozzi, D., Huertas-Company, M., Gal, R. R., Lubin, L. M., Conselice, C. J., Carollo, M., Cattaneo, A. 2014, ApJL, 797, 27–33

97. Larger sizes of massive quiescent early-type galaxies in clusters than in the field at $0.8 < z < 1.5$
Delaye, L., Huertas-Company, M., Mei, S., Lidman, C., Licitra, R., Newman, A., Raichoor, A., Shankar, F., Barrientos, F., **Bernardi, M.**, Cattaneo, A., Sheth, R. K., Licitra, R., Delaye, L. & Raichoor, A. 2014, MNRAS, 441, 203–223

98. Environmental dependence of bulge-dominated galaxy sizes in hierarchical models of galaxy formation. Comparison with the local Universe
Shankar, F., Mei, S., Huertas-Company, M., Moreno, J., Fontanot, F., Monaco, P., **Bernardi, M.**, Cattaneo, A., Sheth, R. K., Licitra, R., Delaye, L. & Raichoor, A. 2014, MNRAS, 439, 3189–3212

99. The Multi-Object, Fiber-Fed Spectrographs for SDSS and the Baryon Oscillation Spectroscopic Survey
Smee, S. et al. 2013, AJ, 146, 32 – 72

100. The Seventh Data Release of the Sloan Digital Sky Survey, The SDSS collaboration (Abazajian, K. et al.) 2009, ApJS, 182, 543–558

101. The Sixth Data Release of the Sloan Digital Sky Survey, The SDSS collaboration (Adelman-McCarthy, J. K. et al.) 2008, ApJS, 175, 297–313

102. The Fifth Data Release of the Sloan Digital Sky Survey, The SDSS collaboration (Adelman-McCarthy, J. K. et al.) 2007, ApJS, 172, 634–644
103. The Forth Data Release of the Sloan Digital Sky Survey, The SDSS collaboration (Adelman-McCarthy, J. K. et al.) 2006, ApJS, 162, 38–48

104. The C4 Clustering Algorithm: Clusters of Galaxies in the Sloan Digital Sky Survey, Miller, C. J., Nichol, R. C., Reichart, D. et al. 2005, AJ, 130, 968–1001

105. The Third Data Release of the Sloan Digital Sky Survey, The SDSS collaboration (Abazajian, J. K. et al.) 2005, AJ, 129, 1755–1759

106. Sloan Digital Sky Survey Imaging of Low Galactic Latitude Fields: Technical Summary and Data Release, Finkbeiner, D. P., Padmanabhan N., Schlegel D. J., et al. 2004, AJ, 128, 2577–2592

107. The Second Data Release of the Sloan Digital Sky Survey, The SDSS collaboration (Abazajian, J. K. et al.) 2004, AJ, 128, 502–512

108. Stellar and Dynamical Masses of Ellipticals in the Sloan Digital Sky Survey, Padmanabhan, N., Seljak, U., Strauss, M. A. et al. 2004, New Astronomy, 9, 329–342

109. SDSS J0903+5028: A New Gravitational Lens, Johnston, D. E., Gordon, T. R., Friedman, J. A. et al. 2003, AJ, 126, 2281–2290

110. The morphology-density relation in the Sloan Digital Sky Survey, Goto, T., Yamauchi, C., Fujita, Y. et al. 2003, MNRAS, 346, 601–614

111. Star formation rate indicators in the Sloan Digital Sky Survey, Hopkins, A. M., Miller, C. J., Nichol, R. C., Bernardi, M. et al. 2003, ApJ, 599, 971–991

112. The environment of AGNs in the Sloan Digital Sky Survey, Miller, C. J., Nichol, R. C., Gomez, P. L., Hopkins, A. M., & Bernardi, M. 2003, ApJ, 597, 142–156

113. An estimate of $\Omega_m$ without priors, Feldman, H. A., Juszkiewicz, R., Ferreira, P. G. et al. 2003, ApJ, 596, 131–134

114. The First Data Release of the Sloan Digital Sky Survey, The SDSS collaboration (Abazajian, J. K. et al.) 2003, AJ, 126, 2081–2086

115. H$_{\alpha}$-Selected Galaxies in the Sloan Digital Sky Survey I: The Catalog, Goto, T., Nichol, R. C., Miller, C. J., Bernardi, M., et al. 2003, PASJ, 55, 771–787

116. The Environment of Passive Spiral Galaxies in the SDSS, Goto, T., Okamura, S., Sekiguchi, M., Bernardi, M., et al. 2003, PASJ, 55, 757–770

117. The Morphological Butcher-Oemler effect in the SDSS: Cut & Enhance Galaxy Cluster Catalog, Goto, T., Okamura, S., Yagi, M. et al. 2003, PASJ, 55, 739–755

118. Average spectra of massive galaxies in the SDSS, Eisenstein, D. J., Hogg, D. W., Fukugita, M. et al. 2003, ApJ, 585, 694–713

119. Galaxy Star-Formation as a Function of Environment in the Early Data Release of the Sloan Digital Sky Survey, Gomez, P., Nichol, R., Miller, C. et al. 2003, ApJ, 584, 210–227
120. Stellar Masses and Star Formation Histories for 80,000 Galaxies from the Sloan Digital Sky Survey, G. Kauffmann, T. M. Heckman, S. D. M. White et al. 2003, MNRAS, 341, 33–53

121. Optical and Radio Properties of Extragalactic Sources Observed by the FIRST Survey and the Sloan Digital Sky Survey, Zeljko, I., Menou, K., Knapp, G. R. et al. 2002, AJ, 124, 2364–2400

122. Spectroscopic Target Selection in the Sloan Digital Sky Survey: The Main Galaxy Sample, Strauss, M. A., Weinberg, D. H., Lupton, R. H. et al. 2002, AJ, 124, 1810–1824

123. Composite Luminosity Functions of the Sloan Digital Sky Survey “Cut and Enhance” Galaxy Cluster Catalog, T. Goto, S. Okamura, T. A. Mckay et al. 2002, PASJ, 54, 515–525

124. Galaxy Clustering in Early Sloan Digital Sky Survey Redshift Data, Zehavi, I., Blanton, M. R., Frieman, J. A. et al. 2002, ApJ, 571, 172–190

125. The Sloan Digital Sky Survey Quasar Catalog. I. Early Data Release, Schneider, D. P., Richards, G. T., Fan, X. et al. 2002, AJ, 123, 567–577

126. Spectroscopic Target Selection for the Sloan Digital Sky Survey: The Luminous Red Galaxy Sample, Eisenstein, D. J., Annis, J., Gunn, J. E. et al. 2001, AJ, 122, 2267–2280

127. High-Redshift Quasars Found in Sloan Digital Sky Survey Commissioning Data. VI. Sloan Digital Sky Survey Spectrograph Observations, Anderson, S. F., Fan, X., Richards, G. T. et al. 2001, AJ, 122, 503–517

128. Composite Quasar Spectra from the Sloan Digital Sky Survey, Vanden Berk, D. E., Richards, G. T., Bauer, A. et al. 2001, AJ, 122, 549–564

129. Colors of 2625 Quasars at $0 < z < 5$ Measured in the Sloan Digital Sky Survey Photometric System, Richards, G. T., Fan, X., Schneider, D. P. et al. 2001, AJ, 121, 2308–2330

130. The Luminosity Function of Galaxies in SDSS Commissioning Data, Blanton, M. R., Dalcanton, J., Eisenstein, D. et al. 2001, AJ, 121, 2358–2380
RESOURCES: GRANTS & AWARDS

NSF AST/1816330 – US$ 418,218 (2018 – 2021)
“Deep-Learning for Galaxy Morphology in the Big Data Era”
PI: M. Bernardi

NASA ADP/NNX09AD02G – US$ 421,258 (2009 – 2014)
“2MASSDSX: A homogeneous catalog of galaxies from the NIR to the NUV”
PI: M. Bernardi

NSF AST/0908242 – US$ 210,856 (2009 – 2012)
“Evidence for the re-ionization of He II from the evolution of the Ly-α forest optical depth in the SDSS?”
PI: M. Bernardi

HST-GO-10488.01-A – US$ 92,317 (2005 – 2008)
“The Most Massive Galaxies in the Universe: Color-Gradients and Texture”
PI: M. Bernardi

NASA ADP/LTSA/NNG06GC19G – US$ 369,212 (2005–2009)
“A Search for and Analysis of the Most Massive Galaxies”
PI: M. Bernardi

HST-GO-10199.06-A – US$ 113,148 / US$ 100,148 to P.I. (2005 – 2007)
“The Most Massive Galaxies in the Universe: Double Trouble?”
PI: M. Bernardi, CoI: R. K. Sheth, K. Gebhardt, R. C. Nichol

SDSS: Spectroscopic pipeline Builder
European Southern Observatory: Studentship (Oct 1996 - Apr 1999)

THESIS ADVISOR & POST-GRADUATE SCHOLAR SPONSOR:

Graduate Students:

F. Nikakhtar (Upenn, in collaboration with Prof. Sheth), October 2018 – present
Funding source: NSF Graduate Research Fellowship

J.-L. Fischer (UPenn), September 2014 – December 2018
Funding source: NASA ADP/NNX09AD02G + UPenn funds
Thesis title: Measuring Photometric Properties of SDSS and MaNGA galaxies
Present position: Data Analyst, Comcast

A. Meert (UPenn), January 2010 – May 2015
Funding source: NSF AST/0908242 + NASA ADP/NNX09AD02G
Thesis title: Bulges and Disks in the Nearby Universe: Applications to Evolution and Formation of Galaxies
Present position: Data Engineer, Swift Capital
E. Tundo (U. Padova / UPenn), May 2006 – March 2010
Funding source: INAF funds
Thesis title: Supermassive Black Holes: a spectroscopic and photometric study on the connection with their host galaxies
Present position: Staff, INAF Florence

J. Hyde (UPenn), September 2005 – May 2009
Funding source: HST-GO-10199.06-A + HST-GO-10488.01-A + NASA ADP/LTSA/NNG06GC19G
Thesis title: Galaxy Image Processing and Morphological Modeling: Applications to Understanding Galaxy Formation and Evolution
Present position: Quantitative Researcher - Global Quantitative Strategies, Citadel LLC

H. Kang (Dartmouth College / Upenn), June 2005 – October 2010
Funding source: Prof. G. Wegner funds
Thesis title: Cosmic Velocity Flows in the Large Scale with SDSS DR7 Early Type Galaxies
Present position: Data Scientist, KAIST Korea

Postdoctoral Scholars:

J. Ferrero, January 2019 – Present
Funding source: UPenn funds

H. Dominguez-Sanchez, September 2016 – Present
Funding source: UPenn funds + NSF AST/1816330

V. Vikram (in collaboration with Prof. Jain), September 2010 – August 2014
Funding source: DES-UPenn funds
Present position: KICP Associate fellow, Argonne National Laboratory

N. Roche, September 2007 – June 2009
Funding source: NASA ADP/LTSA/NNG06GC19G
Present position: Staff, CAUP Portugal

A. Fritz, September 2006 – August 2007
Funding source: NASA ADP/LTSA/NNG06GC19G
Present position: Data Scientist, OmegaLambdaTec GmbH Germany

LONG TERM VISITORS:

M. Huertas-Company, September 2016 – August 2017
Assistant Professor, Paris Observatory/University Paris Diderot

K.-H. Chae, January 2017 – December 2017
Professor, Sejong University Korea
### COURSES DEVELOPED AND TAUGHT:

| Year | Course Code | Course Title                                      | Students |
|------|-------------|--------------------------------------------------|----------|
| 2019A | ASTR001002  | Survey of the Universe                          | 52       |
| 2018C | ASTR211001  | Intro Astrophysics I                            | 33       |
| 2018A | ASTR001001  | Survey of the Universe                          | 68       |
| 2017C | ASTR533001  | Galaxies: Structure, Dynamics and Formation      | 10       |
| 2017A | ASTR001001  | Survey of the Universe                          | 81       |
| 2016C | ASTR211001  | Intro Astrophysics I                            | 31       |
| 2016A | ASTR001001  | Survey of the Universe                          | 83       |
| 2015C | ASTR533001  | Galaxies: Structure, Dynamics and Formation      | 4        |
| 2015A | ASTR001001  | Survey of the Universe                          | 79       |
| 2014C | ASTR211001  | Intro Astrophysics I                            | 12       |
| 2014A | ASTR001001  | Survey of the Universe                          | 77       |
| 2013C | ASTR533001  | Galaxies: Structure, Dynamics and Formation      | 5        |
| 2013A | ASTR001001  | Survey of the Universe                          | 78       |
| 2012C | ASTR001001  | Survey of the Universe                          | 63       |
| 2011C | ASTR001001  | Survey of the Universe                          | 26       |
| 2010C | ASTR001001  | Survey of the Universe                          | 88       |
| 2010C | ASTR001002  | Survey of the Universe                          | 69       |
| 2010A | ASTR533001  | Galaxies: Structure, Dynamics and Formation      | 5        |
| 2009  |              | Galaxies and Stellar Populations, Padova (10 hrs) |          |
| 2009C | ASTR001002  | Survey of the Universe                          | 82       |
| 2008C | ASTR533001  | Galaxies: Structure, Dynamics and Formation      | 6        |
| 2008A | ASTR001002  | Survey of the Universe                          | 72       |
| 2007A | ASTR001003  | Survey of the Universe                          | 21       |
| 2006C | ASTR001002  | Survey of the Universe                          | 63       |
| 2006C | PREC130001  | Exploring the Stars                             | 71       |
| 2006  |              | Galaxy formation and evolution, Padova (15 hrs)  |          |
| 2006A | PHYS295-301 | 3 × 1.5 hrs lecture                             | 8        |
| 2006A | ASTR001001  | Survey of the Universe                          | 54       |
| 2005  |              | Galaxies and Stellar Populations, Naples (8 hrs) |          |
| 2005C | ASTR001002  | Survey of the Universe                          | 69       |
COMMITTEES & ADMINISTRATIVE ASSIGNMENTS:

2019 – Member of PhD Thesis committee for D. Varghese (UPenn)
2018 Physics 501 lecture
2018 – 2019 Colloquium Committee
2018 Teaching mentor of postdoc K. Eckert
2017 – 2018 Mentoring committee of B. Zhen
2017 – 2018 Astro Faculty Search Committee
2017 – 2018 Chair Rittenhouse Lecture Committee
2017 – 2018 Member of PhD Thesis committee for D. Brout (UPenn)
2016 – 2017 Colloquium Committee
2015 – 2016 Chair Colloquium Committee
2015 Member of PhD Thesis committee for J. Fischer (UPenn)
2015 Supervisor of PhD Thesis of A. Meert (UPenn)
2014 – 2015 Chair Colloquium Committee
2014 – 2015 Member of Committee for Promotion of A. Lidz
2014 – 2015 Member of Graduate Admissions Committee
2014 – 2015 Member of PhD Thesis committee for Z. J. Qi (UPenn)
2013 – 2014 Member of PhD Thesis committee for K. Douglass (Drexel)
2013 Colloquium Committee
2012 Examination of PhD thesis of C. Margoulas (University of Melbourne)
2011 Member of PhD Thesis committee for A. Cardullo (Padova University)
2011 Member of PhD Thesis committee for C. Grava (Padova University)
2011 Member of the oral presentation committee for Z. J. Qi (UPenn)
2011 Member of PhD Thesis committee for C. Moorman (Drexel)
2010 – 2011 Astro Faculty Search Committee
2010 Supervisor of PhD Thesis of E. Tundo (Padova/UPenn)
2009 – 2010 Astro Faculty Search Committee
2009 Chair of PhD Thesis committee for M. Caler (UPenn)
2009 Supervisor of PhD Thesis of J. Hyde (UPenn)
2008 – 2009 Astro Faculty Search Committee
2008 Colloquium Committee
2007 Undergrad Students Committee
2007 Liaison with SAS computing about sys admin needs
2006 – 2010 Member of PhD Thesis committee for J. Parejko (Drexel)
2006 Graduate Students Committee
2006 – 2007 Astro Faculty Search Committee
2005 Member of PhD Thesis committee for P. Allen (UPenn)
SYNERGISTIC ACTIVITIES:

- Penn Lead Scientist for the SDSS-IV (2014 – )
- Lead Scientist for two SDSS-IV Value Added Catalogues (2014 – ):
  - SDSS-IV VAC 36: MaNGA PyMorph DR15 photometric catalogue
  - SDSS-IV VAC 37: MaNGA Morphology Deep Learning DR15 catalogue
- Panel member: “Women astronomers chasing black holes and starbursts”, Wharton (March 2018)
- Interview by FEMA Dept. of Homeland Security: “Recognizing women trailblazers” (March 2018)
- Organized a new “Monday Galaxies Brunch” (2017 – )
- Revamped the weekly Friday Journal Club (2017 – 2018)
- Faculty mentor of Diversity and Inclusion in Physics (DIP) and Women in Physics (WiP) (2012 – 2016)
- Panel Member of the NASA Extragalactic Committee (2008, 2013, 2015)
- Panel Member of the Extragalactic NOAO Telescope Allocation Committee (2008 – 2010)
- Referee for Science, AJ, ApJ, MNRAS, New Astronomy, A&A (1998 – )

SELECTED INVITED TALKS:

- Conference (Organizer): Shedding Light on the Dark Universe with Extremely Large Telescopes, ICTP, July 2018
- Conference: Wharton Latin American Conference, Philadelphia, March 2018
- Conference: Cosmology in light of data, Stockholm, July 2017
- Conference: Cosmological simulations: from galaxies to large scales, Sesto, July 2015
- Conference: Quenching & Quiescence Conference, Heidelberg, July 2014
- Seminar: IAP, Paris, July 2014 (associated with the Visiting Professorship at University of Paris D. Diderot June-July 2014)
- Conference: Future Directions in Galaxy Cluster Surveys, Paris, June 2014
- Conference: The SuperJEDI Conference, Mauritius, July 2013
- Seminar: IAP, Paris, July 2013 (associated with the Visiting Professorship at University of Paris D. Diderot, June-July 2013)
• Seminar: ObsPM, Paris, June 2012 (associated with the Visiting Professorship at the Observatory of Paris, June 2012)

• Colloquium: University of Padova, November 2011

• Colloquium: INAF-OAT, Trieste, February 2011

• Conference: Modern Cosmology: Early Universe, CMB and LSS, Benasque, August 2010

• Conference: The Future of Cosmology with Large-Scale Surveys, Sesto, July 2010

• Conference: From Planets to Galaxies, Budapest, July 2010

• Conference: Cluster detection in the optical and submillimeter, ObsPM, Paris, June 2010