

Martin D. Weinberg

Department of Astronomy
University of Massachusetts/Amherst
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Degrees

BS 1979, Physics, Yale University, *cum laude*
PhD 1984, Physics, Massachusetts Institute of Technology
Thesis: *Secular Evolution of Barred Galaxies*
Advisor: Prof. Scott Tremaine

Experience

Professor in Department of Astronomy, University of Massachusetts/Amherst, since 1998
Associate Professor, University of Massachusetts, 1993–1998
Assistant Professor, University of Massachusetts, 1990–1993
Member, School of Natural Sciences, Institute for Advanced Study, Princeton, 1987–1990
Research Associate, Department of Astronomy, Cornell University, 1984–1987

Honors and Affiliations

Visiting Professor, Carnegie Observatories, 2018
Visiting Professor, Institute for Advanced Study in Princeton, 2003, 2010
Sloan Foundation Fellowship, 1993–1996
Siemens Fellowship, 1987–1988
American Astronomical Society
Astronomical Society of the Pacific
American Physical Society
International Astronomical Union

Major University Projects and Service

- Proposed and organized an interdisciplinary *Computational Science Center* at UMass. Established parallel computing facility for the Colleges of Natural Science and Mathematics and Engineering.
- Led project to develop online and web-based visualization tools for teaching introductory astronomy.
- Led revision of undergraduate curriculum that includes computational problem solving at all levels and created an associated computing resource lab.
- Leading a joint Astronomy–Computer Science statistical inference project for data–theory comparison with massive databases. This provided undergraduate and graduate experience for fourteen students.
- Co-organized University of Massachusetts Summer School for Computational Astrophysics. This program trained twelve junior, senior, and first year graduate students per year for two years.
- Member of University Long-Term Strategic Task Force—computational science working group
- Served on University Research Council for 7 years, providing policy input to research- and scholarship-related issues

Major Research Service Projects

- Core member of the 2MASS Science Team. Cognizant scientist for point-source photometry. Designed subsample pixelization algorithm.
- Author of the EXP n-body code. Developed algorithms, theory, and implementation for basis-function expansion Poisson solver for HPC clusters with and without GPUs. Hosted by Bitbucket. Public release in preparation.
- Primary author of the Bayesian Inference Engine (BIE), a platform for Bayesian inference on HPC hardware. Hosted by and publicly available on Bitbucket.

Postdoc & Students

Name	Postion	Years
Becky Arnold	post-doc	2019–now
Joerg Colberg	post-doc	2007–2010
Arend Sluis	post-doc	2004–2007
Albert Hough	post-doc	2002–2005
Kelly Holley-Bockelmann	post-doc	2001–2004
Andrew Cole	post-doc	1999–2002
Enrico Vesperini	post-doc	1995–1998
Enrico Vesperini	Five College Fellow	1998–2001
Kevin Long	post-doc	1990–1992
Luan Luan	graduate	2019–now
McCrackan, Michael	PhD candidate	2017–2018
Petersen, Michael	PhD	2018
Ilsang Yoon	PhD	2012
Yu Lu	PhD	2010
JunHwan Choi	PhD	2008
Sergei Nikolaev	PhD	2001
Chigurapati Murali	PhD	1996
Georgina Beristein	graduate	1993
John Arabadjis	graduate	1991
Hector Aceves	graduate	1992–1995
Sandor Molnar	graduate	1991–1992
Amelia Vinceguerra	undergraduate	2016–2017
Anuhab Haldar	undergraduate	2014–2015
Avram Finkel	undergraduate	1996
Arifa Khandwella	undergraduate	1992–1993
Daniel Patnaude	undergraduate	1992–1993

I have participated in roughly 25 doctoral thesis committees (in Physics, Astronomy, Computer Science, and Polymer Science and Engineering).

Publications

**–student or former student, *–post doc

- ** Petersen, M. S., and Weinberg, M. D. and Katz 2019, “Using torque to understand barred galaxy models” *Monthly Notices of the Royal Astronomical Society*, **490**, 3616-3632.
- ** Petersen, M. S., and Weinberg, M. D. and Katz 2019, “Using Harmonic Decomposition to Understand Barred Galaxy Evolution” *Monthly Notices of the Royal Astronomical Society*, submitted.

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- ** Petersen, M. S., and Weinberg, M. D. and Katz 2019, “Using Commensurabilities and Orbit Structure to Understand Barred Galaxy Evolution” *Monthly Notices of the Royal Astronomical Society*, submitted.
- ** Stadler, D, de Carvalho, R. R., Weinberg, M. D. et al. 2019, “Bayesian Surface Brightness Analysis for Early-Type Galaxies” *Astrophysical Journal*, submitted.
- Weinberg, M. D. 2018, “Practical application of KAM theory to galactic dynamics: III. Irregular orbits disk galaxies embeded in spheroids” *Monthly Notices of the Royal Astronomical Society*, in preparation.
- **Petersen, M. S., Weinberg, M. D., Katz, N. 2017, “The Dynamical Response of Dark Matter to Galaxy Evolution Affects Direct-Detection Experiments” *Physical Review D*, **94**, 123013.
- Weinberg, M. D. 2017, “Practical application of KAM theory to galactic dynamics: II. Application to weakly chaotic orbits in barred galaxies” *Monthly Notices of the Royal Astronomical Society*, submitted.
- Weinberg, M. D. 2017, “Practical application of KAM theory to galactic dynamics: I. Motivation and methodology” *Monthly Notices of the Royal Astronomical Society*, submitted.
- **Petersen, M. S., Weinberg, M. D., Katz, N. 2016, “Dark Matter Trapping by Stellar Bars: The Shadow Bar ” *Monthly Notices of the Royal Astronomical Society*, **463**, 1952.
- *Fardal, M. A., **Huang, S., Weinberg, M. D. 2014, “Generation of mock tidal streams” *Monthly Notices of the Royal Astronomical Society*, **452**, 301.
- *Lu, Z., Mo, H. J., Lu, Yu, Katz, N, Weinberg, M. D., van den Bosch, F. C., Yang, X., “Star Formation and Stellar Mass Assembly in Dark Matter Halos: From Giants to Dwarfs” , *Monthly Notices of the Royal Astronomical Society*.450/1604/
- **Lu, Y., Mo, H. J., **Lu, Z., Katz, N., Weinberg, M. D. 2014, “Bayesian inferences of galaxy formation from the K-band luminosity and HI mass functions of galaxies: constraining star formation and feedback” *Monthly Notices of the Royal Astronomical Society*, **443**, 1252.
- **Lu, Z., Mo, H., Lu, Y., Katz, N., Weinberg, M. D., van den Bosch, F. C., Yang, X 2014, “An Empirical Model for the Star Formation History in Dark Matter Halos” *Monthly Notices of the Royal Astronomical Society*, **439**, 1294.
- Fardal, M. A., Weinberg, M. D. and 9 other colleagues 2013, “Inferring the Andromeda Galaxy’s mass from its giant southern stream with Bayesian simulation sampling” *Monthly Notices of the Royal Astronomical Society*, **434**, 2779.
- Weinberg, M. D. 2014, “Direct Simulation Monte Carlo for astrophysical flows: I. Motivation and methodology” *Monthly Notices of the Royal Astronomical Society*, 438.2995/

- Weinberg, M. D. 2014, “Direct Simulation Monte Carlo for astrophysical flows: II. Ram-pressure dynamics” *Monthly Notices of the Royal Astronomical Society*, 438.3007/
- **Yoon, I., Weinberg, M. D., Katz, N. 2013, “A remarkably simple and accurate method for computing the Bayes Factor from a Markov chain Monte Carlo Simulation of the Posterior Distribution in high dimension” *Statistics and Computation*, submitted.
- Weinberg, M. D. 2012, “Computational statistics using the Bayesian Inference Engine” *Monthly Notices of the Royal Astronomical Society*, **434**, 1736.
- **Lu, Y, Mo, H. J., Katz, N., Weinberg, M. D. 2012, “Bayesian inference of galaxy formation from the K-band luminosity function of galaxies: tensions between theory and observation” *Monthly Notices of the Royal Astronomical Society*, **421**, 1179.
- Weinberg, M. D. 2012, “Computing the Bayesian Evidence from a Markov Chain Monte Carlo Simulation of the Posterior Distribution” *Journal of Bayesian Analysis*, **7**, 737.
- **Yoon, I., Weinberg, M. D., Katz, N. 2011, “New insight on galaxy structure from GALPHAT I. Motivation, methodology, and benchmarks for Sersic models” *Monthly Notices of the Royal Astronomical Society*, **414**, 1625.
- **Lu, Y., Kereš, D., Katz, N., Mo, H. J., Fardal, M., Weinberg, M. 2011, “On the algorithms of radiative cooling in semi-analytic models” *Monthly Notices of the Royal Astronomical Society*, **416**, 660.
- **Lu, Y., Mo, H. J., Weinberg, M. D., Katz, N. 2011, “A Bayesian approach to the semi-analytic model of galaxy formation: methodology” *Monthly Notices of the Royal Astronomical Society*, **416**, 1949.
- **Guo, Y., *McIntosh, D. H., Mo, H. J., Katz, N., van den Bosch, F. C., Weinberg, M. D., **Weinmann, S. M., Pasquali, A. *Yang, X. 2009, “Structural properties of central galaxies in groups and clusters” *Monthly Notices of the Royal Astronomical Society*, **398**, 1129.
- **Choi, J.-H., Weinberg, M. D., Katz, N. 2009, “The dynamics of satellite disruption in cold dark matter haloes” *Monthly Notices of the Royal Astronomical Society*, **400**, 1247.
- **Choi, J.-H., Weinberg, M. D., Katz, N. 2007, “The dynamics of tidal tails from massive satellites,” *Monthly Notices of the Royal Astronomical Society*, **381**, 987.
- Weinberg, M. D., Katz, N. “The bar-halo interaction - II. Secular evolution and the religion of N-body simulations” *Monthly Notices of the Royal Astronomical Society*, **375**, 460.
- Weinberg, M. D., Katz, N. “The bar-halo interaction - I. From fundamental dynamics to revised N-body requirements” *Monthly Notices of the Royal Astronomical Society*, **375**, 425.
- **Lu, Y., Mo, H. J., Katz, N., Weinberg, M. D. 2006, “On the origin of cold dark matter halo density profiles” *Monthly Notices of the Royal Astronomical Society*, **368**, 1931.

- *McIntosh, D. H., Bell, E. F., Weinberg, M. D., Katz, N. 2006, "Nature and completeness of galaxies detected in the Two Micron All Sky Survey" *Monthly Notices of the Royal Astronomical Society*, **373**, 1321.
- *Ravindranath, S., Giavalisco, M., Ferguson, H. C., Conselice, C., Katz, N., Weinberg, M., Lotz, J., Dickinson, M., Fall, S. M., Mobasher, B., Papovich, C. 2006, "The Morphological Diversities among Star-forming Galaxies at High Redshifts in the Great Observatories Origins Deep Survey" *Astrophysical Journal*, **652**, 963.
- **Choi, J.-H., *Lu, Y., Mo, H. J., Weinberg, M. D. 2006, "Dark matter halo response to the disc growth" *Monthly Notices of the Royal Astronomical Society*, **372**, 1869.
- **Levine, E. S., Blitz, L., Heiles, C., Weinberg, M. 2006, "The Warp and Spiral Arms of the Milky Way" *ArXiv Astrophysics e-prints*, arXiv:astro-ph:0609554, submitted to ApJ.
- *Lu, Y., Mo, H. J., Katz, N., Weinberg, M. D. 2006, "On the origin of cold dark matter halo density profiles" *Monthly Notices of the Royal Astronomical Society*, **368**, 1931.
- Weinberg, M. D., Blitz, L. 2006, "A Magellanic Origin for the Warp of the Galaxy" *Astrophysical Journal*, **641**, L33.
- **Simon, J. D., Blitz, L., *Cole, A. A., Weinberg, M. D., Cohen, M. 2006, "The Cosmological Significance of High-Velocity Cloud Complex H" *Astrophysical Journal*, **640**, 270.
- Skrutskie, M. F., Cutri, R. M., Stiening, R., Weinberg, M. D., Schneider, S., Carpenter, J. M., Beichman, C., Capps, R., Chester, T., Elias, J., Huchra, J., Liebert, J., Lonsdale, C., Monet, D. G., Price, S., Seitzer, P., Jarrett, T., Kirkpatrick, J. D., Gizis, J. E., Howard, E., Evans, T., Fowler, J., Fullmer, L., Hurt, R., Light, R., Kopan, E. L., Marsh, K. A., McCallon, H. L., Tam, R., Van Dyk, S., Wheelock, S. 2006, "The Two Micron All Sky Survey (2MASS)" *Astronomical Journal*, **131**, 1163.
- Weinberg, M. D, Katz, N. 2007, "The Bar-Halo Interaction - II. Secular evolution and the religion of N-body simulations" *Monthly Notices of the Royal Astronomical Society*, 375.460/
- *Lu, Yu, Mo, H. J., Katz, N., Weinberg, M. D. 2006, "On the origin of cold dark matter halo density profiles" *Monthly Notices of the Royal Astronomical Society*, **386**, 1931.
- *McIntosh, D. H., Bell, E. F., Weinberg, M. D., Katz, N. 2006, "Nature and completeness of galaxies detected in the Two Micron All Sky Survey" *Monthly Notices of the Royal Astronomical Society*, **373**, 1321.
- Weinberg, M. D, Katz, N. 2007, "The Bar-Halo Interaction-I. From Fundamental Dynamics to Revised N-body Requirements" *Monthly Notices of the Royal Astronomical Society*, **375**, 425.
- **Simon, J. D., Blitz, L., *Cole, A. A., Weinberg, M. D., & Cohen, M. 2006, "The Cosmological Significance of High-Velocity Cloud Complex H" *Astrophys. J.*, **640**, 270.

- Skrutskie, M. F., et al. for the 2MASS Science Team 2006, “The Two Micron All Sky Survey (2MASS)” *Astron. J.*, **131**, 1163.
- *Holley-Bockelmann, K., Weinberg, M., & Katz, N. 2005, “Bar-induced evolution of dark matter cusps” *Monthly Notices of the Royal Astronomical Society*, **363**, 991.
- *Maller, A. H., *McIntosh, D. H., Katz, N., Weinberg, M. D. 2005, “The Galaxy Angular Correlation Functions and Power Spectrum from the Two Micron All Sky Survey,” *Astrophys. J.*, **619**, 147.
- Majewski, S. R., Weinberg, M. D. and co-authors 2004, “A Two Micron All Sky Survey View of the Sagittarius Dwarf Galaxy. II. Swope Telescope Spectroscopy of M Giant Stars in the Dynamically Cold Sagittarius Tidal Stream,” *Astron. J.*, **128**, 245.
- Bell, E. F., *McIntosh, D. H., Katz, N., Weinberg, M. D. 2004, “The Optical and Near-Infrared Properties of Galaxies. I. Luminosity and Stellar Mass Functions,” *Astrophys. J. Supp.*, **149**, 289.
- Majewski, S. R., Skrutskie, M. F., Weinberg, M. D. 2003, Ostheimer, J. C., “A Two Micron All Sky Survey View of the Sagittarius Dwarf Galaxy. I. Morphology of the Sagittarius Core and Tidal Arms,” *Astrophys. J.*, **590**, 1082.
- *Maller, A. H., *McIntosh, D. H., Katz, N., Weinberg, M. D. 2003, “The Clustering Dipole of the Local Universe from the Two Micron All Sky Survey,” *Astrophys. J. Lett.*, **598**, 1.
- Bell, E. F., *McIntosh, D. H., Katz, N., Weinberg, M. D. 2003, “A First Estimate of the Baryonic Mass Function of Galaxies,” *Astrophys. J.*, **585**, 117.
- Weinberg, M. D. and Katz, N. 2002, “Bar-driven dark halo evolution: a resolution of the cusp–core controversy,” *Astrophys. J.*, **580**, 627.
- *Cole, A and Weinberg, M. D. 2002, “An Upper Limit to the Age of the Galactic Bar” *Astrophys. J. Letters*, **574**, 43.
- Weinberg, M. D. 2001, “Noise-driven evolution in stellar systems: a universal halo profile” *Monthly Notices of the Royal Astronomical Society*, **328**, 321.
- Weinberg, M. D. 2001, “Noise-driven evolution in stellar systems: Theory” *Monthly Notices of the Royal Astronomical Society*, **328**, 311.
- Weinberg, M. D. and **Nikolaev, S. 2001, “Structure of the Large Magellanic Cloud from 2MASS” *Astrophys. J.*, **548**, 712.
- **Nikolaev, S. and Weinberg, M. D. 2000, “Stellar Populations in the Large Magellanic Cloud from 2MASS” *Astrophys. J.*, **542**, 804.
- **Nikolaev, S., Weinberg, M. D., Skrutskie, M. F., Cutri, R. M., Wheelock, S. L., *Gizis, J. E. and *Howard, E. M. 2000, “A Global Photometric Analysis of 2MASS Calibration Data” *Astron. J.*, **120**, 3340.

- *Vesperini, E. and Weinberg, M. D. 2000, "Perturbations of Spherical Stellar Systems during Flyby Encounters" *Astrophys. J.*, **534**, 598.
- Weinberg, M. D. 2000, "Effect of the Milky Way on Magellanic Cloud Structure" *Astrophys. J.*, **532**, 922.
- Weinberg, M. D. 1999, "An adaptive algorithm for n-body field expansions" *Astron. J.*, **117**, 629.
- Weinberg, M. D. 1998, "Dynamics of an interacting luminous disc, dark halo and satellite companion" *Monthly Notices of the Royal Astronomical Society*, **299**, 499.
- Weinberg, M. D. 1998, "Fluctuations in finite-N equilibrium stellar systems" *Monthly Notices of the Royal Astronomical Society*, **297**, 101.
- **Murali, C. and Weinberg, M. D. 1997, "Evolution of the Galactic globular cluster system" *Monthly Notices of the Royal Astronomical Society*, **291**, 717.
- **Nikolaev, S. and Weinberg, M. D. 1997, "A Rigorous Reanalysis of the IRAS Variable Population: Scale Lengths, Asymmetries, and Microlensing" *Astrophys. J.*, **487**, 885.
- **Murali, C. and Weinberg, M. D. 1997, "Globular cluster evolution in M87 and fundamental plane elliptical" *Monthly Notices of the Royal Astronomical Society*, **288**, 767.
- **Murali, C. and Weinberg, M. D. 1997, "The effect of the Galactic spheroid on globular cluster evolution" *Monthly Notices of the Royal Astronomical Society*, **288**, 749.
- Weinberg, M. D. 1997, "The Fate of Cannibalized Fundamental-Plane Elliptical Galaxies" *Astrophys. J.*, **478**, 435.
- Weinberg, M. D. 1996, "High-Accuracy Minimum Relaxation N-Body Simulations Using Orthogonal Series Force Computation" *Astrophys. J.*, **478**, 435.
- Weinberg, M. D. 1995, "Production of Milky Way structure by the Magellanic Clouds" *Astrophys. J. Lett.*, **455L**, 32.
- Weinberg, M. D. 1995. "Adiabatic Invariants in Stellar Dynamics. III. Application to Globular Cluster Evolution" *Astron. J.*, **108**, 1414.
- Weinberg, M. D. 1995. "Adiabatic Invariants in Stellar Dynamics. II. Gravitational Shocking" *Astron. J.*, **108**, 1403.
- Weinberg, M. D. 1995. "Adiabatic Invariants in Stellar Dynamics. I. Basic Concepts" *Astron. J.*, **108**, 1398.
- Weinberg, M. D. 1994. "Weakly Damped Modes in Star Clusters and Galaxies" *Astrophys. J.*, **421**, 481.
- Weinberg, M. D. 1994. "Kinematic Signature of a Rotating Bar Near a Resonance" *Astrophys. J.*, **420**, 597.

- Kleinmann, S. G., **Lysaght, **M. G., Pughe, W. L., Schneider, S. E., Skrutskie, M. F., Weinberg, M. D., Price, S. D., Matthews, K., Soifer, B. T., Huchra, J. P. 1994, "The Two Micron All Sky Survey" *Astrophys. Sp. Sci.*, **217**, 11.
- Weinberg, M. D. 1993. "Nonlocal and Collective Relaxation in Stellar Systems," *Astrophys. J.*, **431**, 543.
- **Allen, L, Kleinmann, S. G. & Weinberg, M. D. 1993. "IRAS Variables as Galactic Structure Tracers" *Astrophys. J.*, **411**, 188.
- Hut, P., McMillan, S., Goodman, J., Mateo, M., Phinney, E. S., Pryor, C., Richer, H. B., Verbunt, F., Weinberg, M.D. 1992. "Binaries in Globular Clusters" *PASP*, **104**, 981.
- Hernquist, L. and Weinberg, M. D. 1992. "The Bar-Halo Interaction" *Astrophys. J.*, **400**, 80.
- Weinberg, M. D. 1992. "Constraints on the Bulge using IRAS Variable Point Sources" *Astrophys. J. Lett.*, **392**, L67.
- Weinberg, M. D. 1992. "Detection of a Large-Scale Stellar Bar in the Milky Way" *Astrophys. J.*, **384**, 81.
- Wasserman, I. and Weinberg, M. D. 1991. "Detection, Frequencies and Implications of Wide Binaries in Woolley Catalog" *Astrophys. J.*, **382**, 149.
- Weinberg, M. D. 1991. "Vertical Oscillation of the Galactic Disk." *Astrophys. J.*, **373**, 391.
- Romani, R. and Weinberg, M. D. 1991. "Limits on Cluster Binaries." *Astrophys. J.*, **372**, 487.
- Weinberg, M. D. 1991. "A Search for Instability in Two Families of Spherical Stellar Models." *Astrophys. J.*, **368**, 66.
- Chernoff, D. F. and Weinberg, M. D. 1990. "Evolution of Globular Clusters in the Galaxy." *Astrophys. J.*, **351**, 121.
- Weinberg, M. D. 1989. "Self-gravitating Response of a Spherical Galaxy to Sinking Satellites." *Mon. Not. R. astr. Soc.*, **239**, 549.
- Hernquist, L. and Weinberg, M. D. 1989. "Simulations of Satellite Orbital Decay." *Mon. Not. R. astr. Soc.*, **238**, 407.
- Weinberg, M. D. and Wasserman, I. 1988. "Search for Wide Binaries in the Yale Bright Star Catalog." *Astrophys. J.*, **329**, 253.
- Wasserman, I. and Weinberg, M. D. 1987. "Theoretical Implications of Wide Binary Observations." *Astrophys. J.*, **312**, 390.
- Weinberg, M. D., Shapiro, S. L. and Wasserman, I. 1987. "The Dynamical Fate of Wide Binaries in the Solar Neighborhood." *Astrophys. J.*, **312**, 367.
- Weinberg, M. D. 1986. "Orbital Decay of Satellite Galaxies in Spherical Systems." *Astrophys. J.*, **300**, 93.

- Weinberg, M. D. 1985. "Evolution of Barred Galaxies by Dynamical Friction." *Mon. Not. R. astr. Soc.*, **213**, 451.
- Tremaine, S. and Weinberg, M. D. 1984. "A Kinematic Method for Measuring the Pattern Speed of Barred Galaxies." *Astrophys. J. Lett.*, **282**, L5.
- Tremaine, S. and Weinberg, M. D. 1984. "Dynamical Friction in Spherical Systems." *Mon. Not. R. astr. Soc.*, **209**, 729.
- Weinberg, M. D. 1983. "The Riemann Disks. II. Stability." *Astrophys. J.*, **271**, 595.
- Weinberg, M. D. and Tremaine S. 1983. "The Riemann Disks. I. Equilibrium and Secular Evolution." *Astrophys. J.*, **271**, 586.

Invited papers

- Weinberg, M. D. 2013, "Does the dark-matter halo induce chaos in the galactic disk?," Invited talk at *Probes of Dark Matter on Galaxy Scales*, AAS Topical Conference Series Vol. 1. Proceedings of the conference held 14-19 July 2013 in Monterey, CA. Bulletin of the American Astronomical Society, Vol. 45, #7, #100.02
- Weinberg, M. D. 2005, "Importance of Resonances to the Secular Evolution of Galaxies," Invited talk at *Dynamics of Galaxies*, March 2005.
- Weinberg, M. D. 2004, "Finding the Milky Way in 2MASS," Invited talk at *Milky Way Surveys: The Structure and Evolution of our Galaxy*, Proceedings of ASP Conference #317. The 5th Boston University Astrophysics Conference held 15-17 June, 2003 at Boston University, Boston, MA, USA. Edited by Dan Clemens, Ronak Shah, and Teresa Brainerd. San Francisco: Astronomical Society of the Pacific, 2004., p.129
- Weinberg, M. D. 2003, "Investigating the long-term evolution of galaxies: Noise, cuspy halos and bars," Invited talk at *Astrophysical Supercomputing using Particle Simulations*, IAU Symposium #208, held 10-13 July 2001 in Tokyo, Japan. Eds. Junichiro Makino and Piet Hut, San Francisco: Astronomical Society of the Pacific, 2003., p.215
- Weinberg, M. D. 2001, "Uncovering the Galaxy with 2MASS," Invited talk at the American Astronomical Society Meeting #198, June 2001.
- Weinberg, M. D. 2001, "Evolution of galaxies due to self-excitation," Lectures presented at the NATO Advanced Study Institute, "The Restless Universe: Applications of Gravitational N-Body Dynamics to Planetary, Stellar and Galactic Systems," Blair Atholl, July 2000.
- Weinberg, M. D. 2001, "The Milky Way as a Key to Structural Evolution in Galaxies," to appear in proceedings of 4th Tetons Summer Conference on Galactic Structure, Stars, and the Interstellar Medium, ed. M. Bica & C. Woodward, p. 53
- Weinberg, M. D. 2000, "The Effect of the Magellanic Clouds on the Milky Way Disk", in *The Third Stromlo Symposium: The Galactic Halo*, Canberra, 17-21 August 1998.

- Weinberg, M. D. 1998, "The Effect of the Magellanic Clouds on the Milky Way Disk", in *The Third Stromlo Symposium: The Galactic Halo*, Canberra, 17–21 August 1998.
- Weinberg, M. D. 1998, "Halo-Disk-Satellite Interaction", in *Galactic Halos: A UC Santa Cruz Workshop*, proceedings of a Conference held on the campus of UC Santa Cruz 11-15 August 1997.
- Weinberg, M. D. and Freeman, K. 1997, "Barred Spiral Galaxies" To appear in *Ann. Rev. Astr. Ap.*
- Weinberg, M. D. 1995, "The Dynamics of the Galactic Bar Galaxies" In *Barred Galaxies* (ASP).
- Weinberg, M. D. 1995. "The Shape of the Disk: Clues from the Kinematics of Disk Stars" In *Unsolved Problems of the Milky Way* (Dordrecht: Kluwer), in press.
- Kleinmann, S. G. et al. (including Weinberg, M. D.) 1994. "The Two Micron All Sky Survey: Survey Strategy and Prototyping." In *Infrared Astronomy with Arrays: The Next Generation*. (Dordrecht: Kluwer), pp. 219-226.
- Kleinmann, S. G. et al. (including Weinberg, M. D.) 1994. "The Two Micron All Sky Survey: Survey Rationale and Initial Testing." In *Science with Astronomical Near-Infrared Arrays* (Dordrecht: Kluwer), pp. 11-17.
- Kleinmann, S. G., Lysaght, M. G., Pughe, W. L., Schneider, S. E., Skrutskie, M. F., Weinberg, M. D., Price, S. D., Matthews, K. Y., Soifer, B. T., Huchra, J. P. 1994, "The Two Micron All Sky Survey" *Experimental Astronomy*, **3**, 65.
- Weinberg, M. D. 1993. "Distribution of Stars in the Disk" In *Back to the Galaxy* (Maryland—Goddard).
- Weinberg, M. D. 1993. "How has dynamical evolution changed the Galactic Globular Clusters?" In *The Globular Cluster-Galaxy Connection. Globular Clusters Within the Context of Their Parent Galaxies*, Eleventh Santa Cruz Summer Workshop in Astronomy and Astrophysics, held July 19-29, 1992, at the University of California, Santa Cruz. Eds. Graeme H. Smith, Jean P. Brodie, Astronomical Society of the Pacific, 1993, p. 689.
- Weinberg, M. D. 1990. "Wide Binaries and Limits On Dark Matter." In Proceedings of the NATO Advanced Study Institute on Baryonic Dark Matter, held in Cambridge, U.K., July 17-28, 1989, Eds: D. Lynden-Bell and G. Gilmore; Publisher, Kluwer Academic Publishers, Dordrecht, The Netherlands, p.117.
- Weinberg, M. D. 1989. "Action-angle matrix mechanics." (Talk presented at Orbital Dynamics and Galactic Structure workshop, Tucson, March 1989).
- Weinberg, M. D. 1988. "How We Can Learn From Studying Wide Binary Statistics." *Astr. Sp. Sci.* **142**, 247 (Talk presented at IAU Colloquium #97).

Selected conference contributions

- **Petersen, M. S. Weinberg, M. D., Katz, N. 2014 “Creation of Peanut-Shaped Bulges via the Slow Mode of Bar Growth” Structure and Dynamics of Disk Galaxies. Proceedings of the Conference held 12-16 August, 2013 at the Winthrop Rockefeller Institute, Petit Jean Mountain, Arkansas, USA. Edited by M.S. Seigar and P. Treuhardt. ASP Conference Series, Vol. 480, 2014, p.157
- *Fardal, M. A., **Huang, S., Weinberg, M. D. 2014, “Modeling and Fitting Tidal Stellar Streams” Bulletin of the American Astronomical Society Meeting #223, #309.06
- ** Yoon, I, Weinberg M. D., Katz, N. 2011, “Bayesian Inference of Galaxy Morphology” American Astronomical Society, AAS Meeting #217, #430.34
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