

# Andrew P. Hearin

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**RESEARCH INTERESTS**      Theoretical cosmology and galaxy formation theory

**EMPLOYMENT**      *Postdoctoral Fellow*, September 2012 to present  
Fermi National Laboratory, Batavia, IL

**EDUCATION**      *PhD*, July 2012, Physics & Astronomy  
University of Pittsburgh, Pittsburgh, PA

- Dissertation Advisor: Andrew R. Zentner
- Thesis Topic: Weak Lensing & Galaxy Clustering

*MSc*, 2007, Theoretical Physics, *Distinction*  
Imperial College of London, London, UK

- Thesis Advisor: Carlo Contaldi
- Thesis Topic: Cosmic Microwave Background Anisotropies

*M.S.*, 2006, Mathematics  
University of Massachusetts, Amherst, MA

*B.S.*, 2003, Physics, Mathematics, *Summa Cum Laude*  
University of Richmond, Richmond, VA

## AWARDS

### University of Pittsburgh

- Particle Physics, Astrophysics, and Cosmology Center Fellowship, 2011
- Zaccheus Daniels Astronomy Fellowship, 2010

### Imperial College of London

- Graduation Award, Most Outstanding Masters Thesis, 2007

### University of Richmond

- Science Scholarship (tuition, room, and board), 1999-2003
- Phi Beta Kappa Member, inducted 2003
- R.E. Loving Award, top graduating physics major, 2003
- James D. Crump Prize, top graduating math major, 2003

**PUBLICATIONS**  
(1<sup>st</sup> author)

- A.P. Hearin & D.F. Watson, *The Dark Side of Galaxy Color*, MNRAS, Sept 2013, Arxiv:1304.5557
- A.P. Hearin, A.R. Zentner, A.A. Berlind, J.A. Newman, *SHAM Beyond Clustering: New tests of galaxy-halo abundance matching with galaxy groups*, MNRAS, 433, 659 (2013), ArXiv:1210.4927
- A.P. Hearin, A.R. Zentner, J.A. Newman, A.A. Berlind, *Mind the gap: tightening the mass-richness relation with magnitude gaps*, MNRAS, 430, 1238 (2013), ArXiv:1207.1074
- A.P. Hearin, C. Gibelyou, A.R. Zentner, *Testing the Origin of the CMB Large-Angle Correlation Deficit with a Galaxy Imaging Survey*, JCAP, 10, 012 (2011), ArXiv:1108.2269
- A.P. Hearin, A.R. Zentner, Z. Ma, *General Requirements on Matter Power Spectrum Predictions for Cosmology with Weak Lensing Tomography*, JCAP 4, 34, (2012), ArXiv:1111.0052
- A.P. Hearin, A.R. Zentner, Z. Ma, D. Huterer, *A General Study of the Influence of Catastrophic Photometric Redshift Errors on Cosmology with Cosmic Shear Tomography*, ApJ, 720, 1351 (2010), ArXiv:1002.3383
- A.P. Hearin, A.R. Zentner, *The Influence of Galaxy Formation Physics on Weak Lensing Tests of General Relativity*, JCAP, 4, 32 (2009), ArXiv:0904.3334

**PUBLICATIONS**  
(N<sup>th</sup> author)

- J.A. Newman et al., *Spectroscopic Needs for Imaging Dark Energy Experiments: Photometric Redshift Training and Calibration*, arXiv:1309.5384
- A.R. Zentner, E. Semboloni, S. Dodelson, T. Eifler, E. Krause, A.P. Hearin, *Accounting for baryons in cosmological constraints from cosmic shear*, Phys. Rev. D (2013), 87, 4, ArXiv:1212.1177
- A.R. Zentner, A.P. Hearin, *Asymmetric Dark Matter may alter the evolution of low-mass stars and brown dwarfs*, Phys. Rev. D (2011), 84, 10, ArXiv:1110.5919

**SEMINAR  
TALKS**

- KIPAC at Stanford, 14 January, 2013, *New Probes of the Galaxy-Halo Connection*
- Argonne National Lab, 26 February, 2013, *A Preposterous Theory of Galaxy Evolution*

**CONFERENCE  
TALKS**

- Galaxies in the Cosmic Web Workshop, KICP at U. Chicago, 18 June, 2013, *The Dark Side of Galaxy Color*
- COSMO 11 International Conference on Particle Physics & Cosmology, 22-26 August, 2011, *Precision Cosmology with Weak Gravitational Lensing*
- Great Lakes Cosmology Workshop, 14-16 June, 2010, *The Influence of Catastrophic Photo-z Errors on Cosmology with Cosmic Shear*
- Snowbird Workshop on Particle Astrophysics, 23-28 March 2010, *The Influence of Photo-z Errors on Weak Lensing Measurements of Dark Energy*
- Santa Fe Cosmology Workshop, 6-24 July, 2009, *Cosmic Shear Systematics from Photo-z Catastrophes*

**INSTRUCTION  
EXPERIENCE**

## University of Pittsburgh

- Fall 2007: Teaching Assistant, Basic Physics for Science and Engineering I
- Spring 2008: Teaching Assistant, Basic Physics for Science and Engineering II
- Fall 2007: Teaching Assistant, Physics 174, Basic Physics for Science and Engineering I
- Spring 2008: Teaching Assistant, Physics 175, Basic Physics for Science and Engineering II
- Fall 2009: Grader, Astronomy 89, Stars, Galaxies, and the Cosmos

## University of Massachusetts

- Fall 2005: Teaching Assistant, Math 131: Calculus I
- Spring 2006: Teaching Assistant, Math 131: Calculus I
- Fall 2006: Instructor, Math 100: Basic Math Skills for the Modern World
- Spring 2007: Instructor, Math 100: Basic Math Skills for the Modern World

## DEPARTMENT ACTIVITIES

### Fermilab

- *Chair of Seminar Committee*, Fall 2013 to present

## University of Pittsburgh

- *Local Organization Committee*, PITT-PACC workshop, Exploring Low-Mass Dark Matter Candidates, November 14-16, 2011.
- *Mentor*, Guidance Program for first-year graduate students, 2011-2012.