Ethan Rosenthal

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Education

Columbia University

Ph.D. in Physics — In Progress
M.Phil. in Physics — 2012
M.A. in Physics — 2011

James Madison University

B.S. in Physics, Math minor, *magna cum laude* — 2009

Research

Columbia University — 2010-Present
Graduate Research Assistant
Advisor: Prof. Abhay Pasupathy

- Scanning tunneling microscopy (STM) and spectroscopy (STS) of correlated electron systems like unconventional superconductors, density wave materials, and mott insulators.
- Experience ranges from designing and building low temperature, ultra high vacuum (UHV) STMs to electronic bandstructure and scattering calculations.

James Madison University — 2007-2008
Undergraduate Research Assistant
Advisor: Prof. Chris Hughes and Prof. Brian Augustine

- Thin-film adhesion on polymer substrates for lab-on-a-chip devices.

Columbia University — 2008
NSF Research Experience for Undergraduates Student
Advisor: Prof. Philip Kim

- Electronic transport in graphene-dielectric heterostructures.

National Institute of Standards and Technology — 2007
NSF Summer Undergraduate Research Fellowship Student
Advisor: Dr. Kevin Silverman

- Electronic transport in self-assembled, semiconductor quantum dots.

Honors

Allen M. Sachs Teaching Award — 2012
Columbia Physics Department Preceptor — 2010-2011
Walter and Martha Curt Physics Scholarship — 2006-2009
Henry W. Leap Physics Scholarship — 2008
Dr. Raymond A. and Elizabeth A. Serway Physics Scholarship — 2007
Honors Achievement Scholarship — 2006
Presidential Physics Scholarship — 2005

Publications

E. P. Rosenthal, E. F. Andrade, C. J. Arguello, R. M. Fernandes, L. Y. Xing, X. C. Wang, C. Q. Jin, A. J. Millis, and A. N. Pasupathy
Visualization of electron nematicity and unidirectional antiferroic fluctuations at high temperatures in NaFeAs
Nature Physics **10**, 225232 (2014)

Publications (continued)

S. P. Chockalingam*, C. J. Arguello*, **E. P. Rosenthal**, L. Zhao, C. Gutirrez, J. H. Kang, W. C. Chung, R. M. Fernandes, S. Jia, A. J. Millis, R. J. Cava, A. N. Pasupathy
Visualizing the charge density wave transition in 2H-$NbSe_2$ in real space
Phys. Rev. B. (in press)

C. J. Arguello, J. Munevar, T. Goko, E. Andrade, B. A. Frandsen, L. Liu, F. L. Ning, A. N. Pasupathy, **E. Rosenthal**, H. Micklitz, J. Aguero, E. Baggio-Saitovitch, R. dOrtenzio, T. Medina, T. J. S. Munsie, T. J. Williams, G. M. Luke, Pengcheng Dai, H. Q. Luo, X. Y. Liu, S. Carr, F. Ronning, E. D. Bauer, R. M. Fernandes, E. Uykure, S. Miyasaka, S. Tajima, M. Nakajima, S. Uchida, Y. J. Uemura
Multiprobe characterization of coexisting antiferromagnetic and superconducting orders in $Ba_2(Fe,Ni)_2As_2$ near the phase boundary
Nature Comms. (in review)

J. Okamoto, C. J. Arguello, **E. P. Rosenthal**, A. N. Pasupathy, A. J. Millis
Experimental evidence for a Bragg glass density wave phase in a transition-metal dichalcogenide
(in review)

C. J. Arguello, **E. P. Rosenthal**, E. F. Andrade, W. Jin, P. C. Yeh, N. Zaki, S. Jia, R. J. Cava, R. M. Fernandes, A. J. Millis, T. Valla, R. M. Osgood Jr., A. N. Pasupathy
Quasiparticle interference and the origin of charge density waves in 2H-$NbSe_2$
(in preparation)

E. P. Rosenthal, E. F. Andrade, C. J. Arguello, R. M. Fernandes, L. Y. Xing, X. C. Wang, C. Q. Jin, A. J. Millis, and A. N. Pasupathy
Doping dependence of nematicity in $NaFe_{1-x}Co_xAs$ imaged with scanning tunneling spectroscopy
(in preparation)

Talks

"Doping dependence of nematicity in $NaFe_{1-x}Co_xAs$ imaged with scanning tunneling spectroscopy" APS March Meeting, Denver, CO, 2014

"Magnetic origin of electronic nematicy in NaFeAs" APS March Meeting, Baltimore, MD, 2013

"Direct visualization of high temperature electronic nematicity in NaFeAs" A3 Tokyo Meeting, Tokyo, Japan, 2013

"Imaging charge density wave nucelation in $NbSe_2$" APS March Meeting, Boston, MA, 2012