Sean Bartz

sbartz@macalester.edu
(612) 751-1979

Macalester College
1600 Grand Ave
St Paul, MN 55105

Education

PhD Physics, University of Minnesota 2014
Meson Spectra from a Dynamical Three-Field Model of AdS/QCD

BS Physics and Mathematics, summa cum laude, Xavier University 2008

Fellowships

University of Minnesota Doctoral Dissertation Fellow 2013-2014
U.S. Department of Energy Office of Science Graduate Fellow 2010-2013

Professional Appointments

Visiting Assistant Professor, Macalester College 2014-2018

Grants

Wallace Scholarly Activities Fund, Macalester College 2015
Beltmann Fund Research Grant, Macalester College 2015, 2016

Refereed Publications

Chiral phase transition and meson melting in a soft-wall AdS/QCD model 2016
S. Bartz, T. Jacobson
Phys. Rev. D 94, 075022

Dynamical Three-Field AdS/QCD Model 2014
S. Bartz, J. Kapusta
Phys. Rev. D 90, 074034

Pseudoscalar Mass Spectrum in a Soft-Wall Model of AdS/QCD 2011
T. Kelley, **S. Bartz**, J. Kapusta
Phys. Rev. D 83, 016002

Publications Under Review

Chiral phase transition at finite chemical potential in 2+1-flavor soft-wall AdS/QCD 2018
S. Bartz, T. Jacobson
Submitted to *Phys. Rev. C*, arXiv:1801.00358 [hep-ph]

A Dynamical AdS/Yang-Mills Model 2018

S. Bartz, A. Dhumuntarao, J. Kapusta
Submitted to *Phys. Rev. D*, arXiv:1801.06118 [hep-th]

Invited Talks

University of Wisconsin - La Crosse Physics Seminar — October 11, 2017
"Melting the nucleus in five dimensions"

University of Minnesota Nuclear Theory Seminar — October 21, 2016
"Chiral phase transition in soft-wall AdS/QCD"

Brookhaven National Laboratory Nuclear Theory Seminar — June 23, 2014
"Dynamical Three-Field AdS/QCD Model"

Contributed Talks

Critical Point and Onset of Deconfinement — August 2017
Stony Brook, New York
"Chiral phase diagram in soft-wall AdS/QCD"
*PoS(CPOD2017)*064

American Physical Society, Division of Nuclear Physics — October 2016
Vancouver, British Columbia
"Quark-gluon plasma effects on hadrons in AdS/QCD"

American Physical Society, April Meeting — April 2016
Salt Lake City, Utah
"Meson Spectra from a Three-Field Model of AdS/QCD"

Conference on the Intersection of Particle and Nuclear Physics — June 2015
Vail, Colorado
"Light meson spectra from dynamical three-field AdS/QCD"

American Physical Society, April Meeting — April 2014
Savannah, Georgia
"Meson Spectra from a Three-Field Model of AdS/QCD"

American Physical Society, April Meeting — April 2013
Denver, Colorado
"A Potential for Soft-Wall AdS/QCD"

Hot Quarks 2012 — October 2012
Copamarina, Puerto Rico
"Meson Spectra and Thermodynamics in Soft-Wall AdS/QCD"
2013 *J. Phys.: Conf. Ser.* 446 012019

7th International Workshop on Chiral Dynamics August 2012
Jefferson National Accelerator Facility, Newport News, Virginia
"Three-Field Potential for Soft-Wall AdS/QCD"
PoS CD12 (2013) 029

Light Cone 2012 July 2012
Krakow, Poland
"Three-Field Potential for Soft-Wall AdS/QCD"
Acta Phys. Polon. Supp. 6 (2013) 13-18

Conference on the Intersection of Particle and Nuclear Physics June 2012
St. Petersburg, Florida
"Three-Field Potential for Soft-Wall AdS/QCD"
AIP Conf. Proc. 1560, 456 (2013).

Eleventh Workshop on Non-Perturbative Quantum Chromodynamics June 2011
Paris, France
"Pions and Strange Mesons in a Modified Soft-Wall Model of AdS/QCD"

American Physical Society, April Meeting April 2011
Anaheim, California
"Pseudoscalar Mass Spectrum in a Soft-Wall Model of AdS/QCD"

Poster Presentations

American Association of Physics Teachers Summer Meeting July 2017
Cincinnati, Ohio
"Relaxation Method Modeling of Non-ideal Parallel Plate Capacitor"

Quark Matter 2017 February 2017
Chicago, Illinois
"Chiral phase transition in a soft-wall model of AdS/QCD"

Workshop on QCD Under eXtreme Conditions (XQCD) June 2014
Stony Brook University, New York
"Meson spectra from holographic QCD"

American Physical Society, Division of Plasma Physics November 2007
Orlando, Florida
"A smart filtering method for space-charge dominated beam simulations"

Teaching Experience

Visiting Assistant Professor, Macalester College 2014-2018
Principles of Physics I (Fall 14, Fall 15, Fall 16, Fall 17)
Principles of Physics II (Spring 15, Fall 15, Spring 16, Spring 17, Spring

18)
Modern Physics (Fall 14)
Statistical Mechanics (Spring 15, Spring 17)
Electromagnetic Theory (Fall 15, Fall 16, Fall 17)
Classical Mechanics (Spring 16, Spring 18)
Independent Project (Spring 17)

Teaching Assistant, University of Minnesota 2008-2010
Introductory Physics for Pre-Medicine I Lab (Fall 08, Spring 09, Fall 09)
Introductory College Physics II Lab (Spring 10)

Academic Service

Service to Department or College

Scribe, Mid-Course Interview, Macalester College 2015-2017
Allies Project Ally, Macalester College 2015-2018
Non Tenure-Track faculty orientation panel, Macalester College 2015
Graduate Education Committee, Minnesota School of Physics 2009-2011

Service to Profession

Referee, *Physical Review D* 2017-2018
Referee, *Physical Review C* 2016
Abstract Reviewer, DNP Conference Experience for Undergraduates 2016-2017
Referee, *Physics Letters B* 2010

Outreach

Moderator, Minnesota High School Science Bowl 2017-2018
Scientific Judge, Minnesota High School Science Bowl 2015-2016
Scientific Demonstrator, Tennis2College Program 2015-2017

Honors And Awards

Travel Award, APS Forum for Graduate Student Affairs 2014
U.S. Delegate, Lindau Nobel Laureate Meeting, U.S. Dept. of Energy 2012
Outstanding Physics Teaching Assistant, University of Minnesota 2009

Professional Memberships

American Association of Physics Teachers 2017-2018
American Physical Society 2011-2018
Partnership for Integration of Computation into Undergraduate Physics 2016-2018
Anacapa Society 2015-2018

Professional Development

Teaching Computation in the Sciences Using MATLAB: Workshop 2016
Working group leader

Partnership for Integration of Computation into Undergraduate Physics 2016
Summer Faculty Development Workshop

Midstates Consortium Summer Workshop for Early Career Success 2014

Student Mentoring

Macalester summer research students, 10-week program, unless noted

Theodore Jacobson 2016-2017
Chiral phase transition of quark-gluon plasma in AdS/QCD. Co-authored publication, with second under review. Awarded travel grant to present poster at Division of Nuclear Physics annual meeting in 2016 and 2017. Supervised independent study.

Elias Lilleskov 2015
Deconfinement of quark matter in AdS/CFT. Awarded travel grant to present poster at Division of Nuclear Physics annual meeting.

Joshua Rollag 2015
Scalar meson-glueball mixing in AdS/QCD. Poster accepted for Division of Nuclear Physics annual meeting.

Aditya Dhumuntarao 2015-2018
Glueballs in AdS/QCD. University of Minnesota REU, informal advising and collaboration. Co-authored paper under review.

Peer-Reviewed Teaching Materials

Relaxation Method for a real parallel-plate capacitor September 2016
S. Bartz and J. Heyman
Computational and laboratory exercise published in the SERC collection

Introduction to Projectile Motion: Target Practice August 2016
S. Bartz
Computational exercise under review for the PICUP Collection