

Curriculum Vita: Lauren E. Palladino

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Education

Vanderbilt University, Nashville, TN

Doctorate of Philosophy in Physics, expected August 2014

Qualifying Exam, October 2011

Fisk University, Nashville, TN

Master of Arts in Physics, December 2009

Hofstra University, Hempstead, NY

Bachelor of Science in Physics, May 2007

Fellowships/Grants

- BOLD Fellow, Vanderbilt University 2013
- Dissertation Enhancement Grant, Vanderbilt University 2013
- Science Teaching Fellow, Vanderbilt University 2011-2012, 2013-2014
- GAANN Fellowship, Vanderbilt University 2010-2012
- VIDA Fellowship, Vanderbilt University 2009-2010
- NSF CREST Center Scholar, Fisk University 2007-2009

Honors/Awards

- Sigma Pi Sigma National Physics Honor Society, Hofstra University 2006
- Harold E. Clearman Endowed Memorial Award, Hofstra University 2006
- Stanley J. Kendrick Endowed Memorial Scholarship, Hofstra University 2005
- James A. Moore Endowed Memorial Award, Hofstra University 2004
- Presidential Scholarship, Hofstra University 2003-2007
- Honors College Scholarship, Hofstra University 2003-2007
- Provost's/Dean's List, 6 semesters, Hofstra University 2003-2007

Research Experience

Vanderbilt University, Nashville, TN

Research Assistant, 09/2009- Present

- Built multi-component, analytic, galaxy potential model of the Milky Way.
- Calculated orbits of stars in the Milky Way's disk and halo from the SDSS Sloan Extension for Galactic Understanding and Evolution (SEGUE-2) database.
- Modeled orbits of retrograde G and K dwarf stars in the Galactic disk.
- Determined orbital parameters of chemically distinct stars in the Galactic disk (with Jennifer Sobeck).
- Discovered new class of G and K dwarf hypervelocity star candidates.
- Identified sample of F dwarf hypervelocity star candidates.
- Developed theory of alternate hypervelocity star ejection mechanism.

Fisk/Vanderbilt University, Nashville, TN

Research Assistant, 09/2007- 08/2009

- Developed technique to identify M giant stars outside of the Milky Way's halo based on colors.

- Used Sloan Digital Sky Survey Data Release 7 to identify stellar candidates that may comprise an intragroup stellar population surrounding the Milky Way.
- Conducted SDSS-III MARVELS spectroscopic observations at Apache Point Observatory, including switching fiber plates on 2.5m telescope.
- Reduced echelle spectra of binary star system MML53.

Hofstra University, Hempstead, NY

Research Assistant, 05/2005- 05/2007

- Reduced data from WFPC2 and STIS images using IRAF and STSDAS tasks to create deepest field images of Supernova 1987A which uncovered UV light echo.
- Trained in large data set management.
- Conducted spectroscopic observations of SN 1987A at Cerro Tololo International Observatory.

Publications

Lauren E. Palladino, Katharine J. Schlesinger, Kelly Holley-Bockelmann, Carlos Allende Prieto, Timothy C. Beers, Young Sun Lee, Donald P. Schneider, "Hypervelocity Star Candidates in the SEGUE G & K Dwarf Sample," *ApJ*, accepted (2013).

Lauren E. Palladino, Kelly Holley-Bockelmann, Heather Morrison, Patrick R. Durrell, Robin Ciardullo, John Feldmeier, Richard A. Wade, J. Davy Kirkpatrick, Patrick Lowrance, "Identifying High Metallicity M Giants at Intragroup Distances with SDSS," *AJ* 143 128 (2012).

Heather Cegla; Hebb, L.; Stassun, K. G.; Stempels, H. C.; Cargile, P. A.; **Palladino, L. E.**; Consortium, SuperWASP, "MML 53: A New Low-Mass, Pre-Main Sequence Eclipsing Binary in the Lupus Cloud Discovered By SuperWASP," *AA*, submitted (2010).

Presentations

Lauren Palladino; "Hypervelocity Stars in SEGUE." SDSS-III Collaboration Meeting, Baltimore, Maryland, June 2013.

Lauren Palladino; "Stellar Orbits in the Milky Way: Ejected Stars." Bridge Program Research Celebration Day, Nashville, Tennessee, May 2013.

Lauren Palladino; Knudson, G.; *Invited Speaker*, "Demonstration of Effective Partner-Teaching: Phases of the Moon." Center for Science Outreach Celebration of Teaching, Nashville, Tennessee, May 2013.

Lauren Palladino; "Setting Goals and Self Assessment." Bridge Program Orientation, Nashville, Tennessee, August 2012.

Lauren Palladino; "Stellar Orbits in the Halo." SDSS-III Collaboration Meeting, Nashville, Tennessee, August 2011.

Lauren Palladino; "Stellar Orbits in the Halo." Galactic Archaeology with SEGUE, Potsdam, Germany, July 2011.

Lauren Palladino; Holley-Bockelmann, K.; Poster Presentation, "The Search for Intragroup Stars Around the Milky Way." American Astronomical Society, Long Beach, California, January 2009.

Stephen Lawrence; Palladino, L.; Crotts, A.; Poster Presentation, "The Elusive Ultraviolet Light Echo of Supernova 1987A." American Astronomical Society, Honolulu, Hawaii, May 2007.

Stephen Lawrence; Palladino, L.; "Is There an Echo in Here Out There?" Astronomical Society of New York, Hempstead, New York, April 2007.

Other Publications, Dissemination, and/or Products

- BOLD module for ASTR 353 course
- **Astrobites: "More hypervelocity stars are jetting out of the galaxy."** August, 2013.
- **Press Release: "Rogue stars ejected from the galaxy found in intergalactic space."** April, 2012. (<http://news.vanderbilt.edu/2012/04/rogue-stars-intergalactic-space/>) *Picked up by:* Universe Today, Centauri Dreams, Before It's News, HiddenGalaxy.net, Science-A-GoGo, The Register, Futurity, TheAllINeed, Wrac, CosmoQuest, Sify, Digital Journal, Our Planet Today, Space Info.
- **Lauren E. Palladino, "The Search for Intragroup Stars Around the Milky Way."** August, 2009. Master's Thesis
Describes techniques for identifying bright intragroup stars beyond the gravitationally bound system of the Milky Way via color analysis.

Meetings

- **American Astronomical Society (AAS),** National Harbor, MD, January 2014.
- **Sloan Digital Sky Survey (SDSS) Collaboration Meeting,** Baltimore, MD, June 2013.
- **National Society of Black Physicists/National Society of Hispanic Physicists (NSBP/NSHP) Annual Conference,** Austin, TX, September 2011.
- **Sloan Digital Sky Survey (SDSS) Collaboration Meeting,** Local Organizing Committee, Nashville, TN, August 2011.
- **Galactic Archaeology with SEGUE Meeting,** Potsdam, Germany, July 2011.
- **Sloan Extension for Galactic Understanding and Evolution (SEGUE) Collaboration Meeting,** Santa Cruz, CA, February 2010.
- **Women in Astronomy Meeting,** College Park, MD, October 2009.
- **Sloan Digital Sky Survey (SDSS) Collaboration Meeting,** Princeton, NJ, July 2009.
- **National Society of Black Physicists/National Society of Hispanic Physicists (NSBP/NSHP) Annual Conference,** Nashville, TN, February 2009.
- **American Astronomical Society (AAS) Meeting,** Long Beach, CA, January 2009.
- **National Society of Black Physicists/National Society of Hispanic Physicists (NSBP/NSHP) Annual Conference,** Washington DC, February 2008.
- **American Astronomical Society (AAS) Meeting,** Honolulu, HI, May 2007.

Teaching Experience

Department of Physics and Astronomy, Vanderbilt University, Nashville, TN

Teaching Assistant, 8/2012 - 4/2013

- Led introductory labs in the Physics & Astronomy Department.
- Responsible for set-up, guiding laboratory activities, administering and grading assignments and tests.
- Contributed to course material modifications.
- Operate 8" telescopes.

Bridge Program Computational Bootcamp, 8/2012

- Assisted incoming graduate students with activities pertaining to a week-long 'crash course' in programming and plotting with Python.

Computational Guru, 2/2011 - 5/2011

- Prepared and led introductory “Python for Astronomers” seminars covering syntax and common useful programming tools for graduate students and postdoctoral fellows in the Vanderbilt Astronomy Department.

Programs for Talented Youth, Peabody College, Vanderbilt University, Nashville, TN

Weekend Academy at Vanderbilt University (WAVU) Teaching Assistant, 10/2013

- Assisted and lead instruction of Introductory Physics (Statics) course to a group of middle school-age gifted students.

Vanderbilt Summer Academy (VSA) Instructor, 9/2013

- Designed new Astrobiology course to be taught in Summer of 2014 to middle school-age gifted students.

Vanderbilt Summer Academy (VSA) Teaching Assistant, 6/2013

- Assisted and lead instruction of Introduction to Astronomy course (covering topics from the Solar System, to Stars & Galaxies, to Large Scale Structure and Cosmology) to a group of high school-age gifted students.

Intersession Teaching Assistant, 3/2013

- Assisted and lead instruction of Introduction to Astronomy course (covering topics from the Solar System, to Stars & Galaxies, to Large Scale Structure and Cosmology) to a group of middle school-age gifted students.

Center for Science Outreach, Vanderbilt University, Nashville, TN

Scientist in the Classroom Partnership (SCP) participant, 7/2013 - present

- **Science Teaching Fellow:** Worked with middle school science teachers and their students. Lead interactive laboratory activities paralleling science curriculum.

Scientist in the Classroom Partnership (SCP) participant, 7/2011 - 5/2012

- **Science Teaching Fellow:** Worked with 4th grade science teachers and their students. Lead interactive laboratory activities paralleling science curriculum.
- **Lunch with the Scientist:** Held discussions and led demonstrations regarding scientific topics of interest to the students beyond material covered in science curriculum.

Hofstra University, Hempstead, NY

Laboratory Assistant, 2/2004 - 5/2007

- Managed laboratory operations and prepared equipment for physics lab courses. Revised lab manual to improve students’ comprehension.
- Assisted ‘Observation Sessions’ for astronomy labs by handling telescopes.

Astronomy Tutor, 9/2006 - 5/2007

- Led weekly one-on-one sessions to assist in students’ understanding of introductory astronomy course material and lab work.

Training and Development

Center for Teaching, Vanderbilt University, Nashville, TN

Blended and Online Learning Design (BOLD) Fellow, 8/2013-present

- Designed and developed online module, containing activities to teach the Eggen, Lynden-Bell, and Sandage model of galaxy formation, to be used in conjunction with graduate/undergraduate course ASTR 353: Structure and Formation of Galaxies

Certificate in College Teaching (CiCT) Seminar, 8/2013-present

- Attended professional development seminars on teaching in a college setting.
- Became familiar with current literature on effective college teaching techniques.

SciPy 2012, Austin, TX

Workshop Participant, July 2012

- Participated in tutorials and conference discussions revolving around visualization techniques and astronomical applications of Python tools.

Gordon Research Conference: Physics Research & Education, Colby College, Waterville, ME

Workshop Participant, June 2012

- Participated in discussions and became familiar with available and effective teaching tools centering on incorporating astronomical discoveries into Physics Education.

Outreach and Mentoring Experience

Department of Physics and Astronomy, Vanderbilt University, Nashville, TN

Diversity Journal Club Organizer, 2013-present

- Initiated and organized monthly department Diversity Journal Club meetings addressing diversity issues relevant to STEM and life in academia.

Peer Mentor, 7/2010 - present

- Volunteered as a peer mentor in Fisk-Vanderbilt M.A.-to-Ph.D. Bridge Program.
- Advised new students on topics including living arrangements, course scheduling, time management, available resources, expectations, etc.

Women In Physics Group, 9/2007 - present

- Participated in group discussions centering on career development, addressing biases towards women in STEM fields, awareness of campus resources.
- Addressed persistent lack of invited female colloquium speakers by securing partial funding and instituting a reserved schedule block for prominent females scientists.

Fisk/Vanderbilt NASA Roadshow participant, 2010

- Directed outreach to ~50 high-school science students using Fisk/Vanderbilt NASA Roadshow Planetarium

Dyer Observatory, Vanderbilt University, Brentwood, TN

Dyer Observatory Volunteer, 2009-present

- **Ask an Astronomer:** Available to answer science questions from 50-100 members of the public during various Kid's Night or Open House events.
- **Tour Guide:** Led groups of ~4 members of the public on tours of the Observatory premises, discussed Observatory's Star Chamber.

Center for Teaching, Vanderbilt University, Nashville, TN

Teaching Assistant Orientation (TAO) expert panelist, 8/2013

- Fielded questions from first-time Teaching Assistants as a panel member consisting of experienced TAs.

Center for Science Outreach, Vanderbilt University, Nashville, TN

Research Experience for High School Students (REHSS) Poster judge, 7/2013

- Judged students' posters of research projects.

Metro Nashville Public Schools Science Fair judge, 3/2013, 5/2013

- Judged students' posters of science experiments.

Hofstra University, Hempstead, NY

"Stars on Sundays" participant, 2005-2007

- Operated 8" and 11" telescopes.
- Led small discussions, and answered questions for 50-100 members of the public per event.

Professional Memberships/Affiliations

Vanderbilt Physics & Astronomy Department Climate Committee, *Graduate Student Representative*, 2010-Present

Sloan Digital Sky Survey (SDSS), *member*, 2009-Present

American Astronomical Society (AAS), *Junior Member*, 2008-Present

Sigma Pi Sigma National Physics Honor Society, *Member*, 2006-Present

Society of Physics Students, Hofstra University Chapter, *Vice President*, 2004-2005, *President*, 2005-2007

Computer Skills

Proficient in Python, Fortran

Image reduction with IRAF (PyRAF) and STSDAS tasks

Some Perl, IDL, Supermongo, SQL/CAS

LaTeX

Parallel supercomputing with MPI, PBS